



浙江经济职业技术学院

From “Deep Blue” to “Deep Green”

Case study on the project of TVET for SD in China

The International Network on
Innovative Apprenticeship
Beijing China
May 2011



Chandler
A.P. ZJTIE





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- 1,Rapid growing of TVET in China
- 2,SD and ESD in China
- 3,The birth of the Inte'l Project
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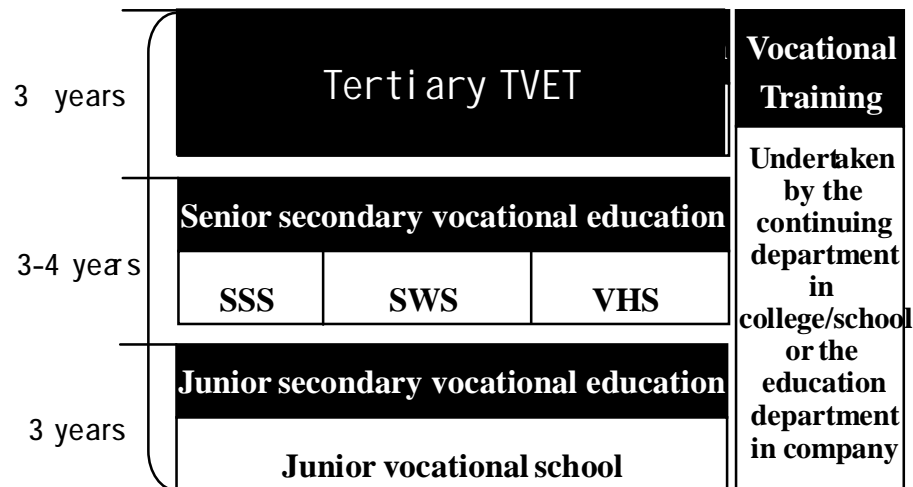


Figure 1 TVET in China

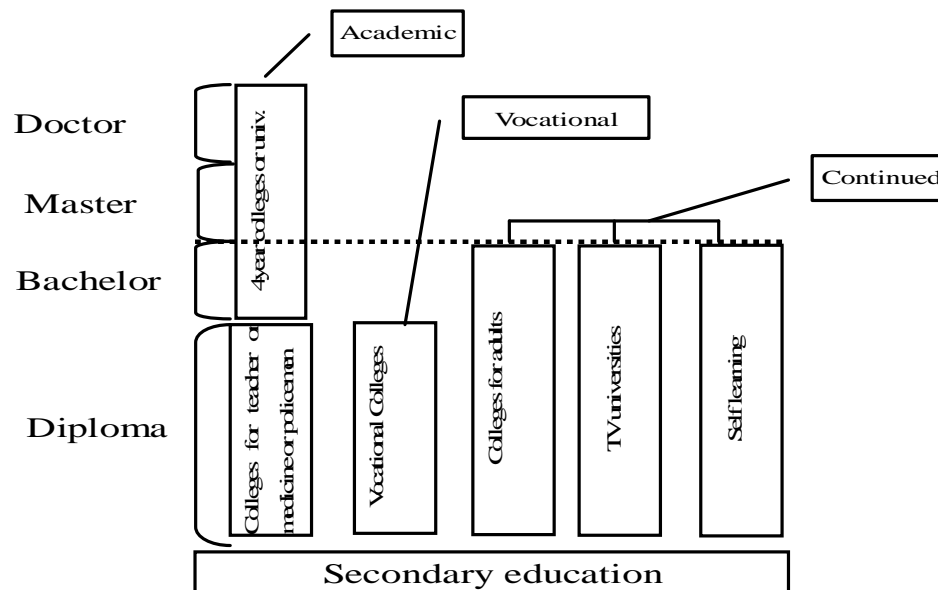


Figure 2 postsecondary TVET in China



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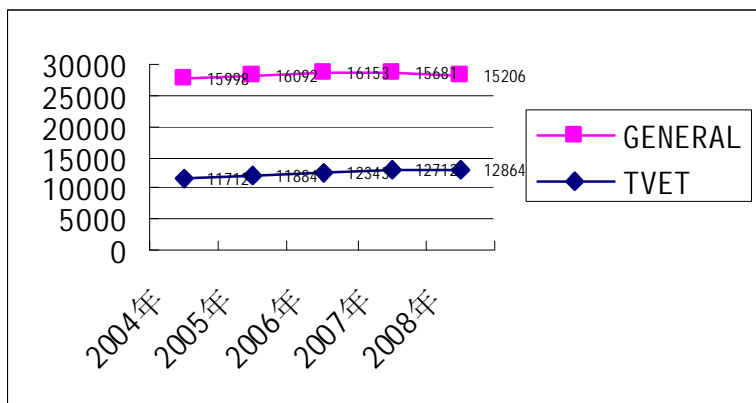


Figure3 quantity of schools in secondary level

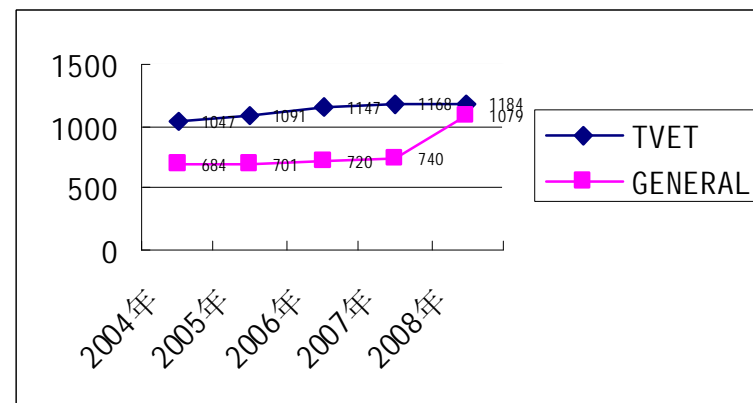


Figure4 quantity of schools in tertiary level

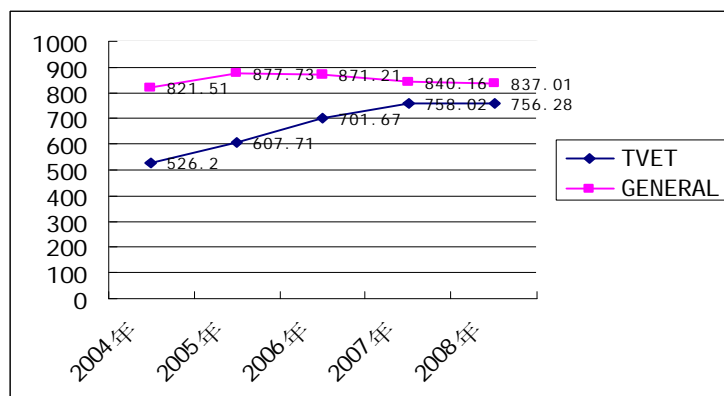


Figure5 quantity of first year students in secondary level

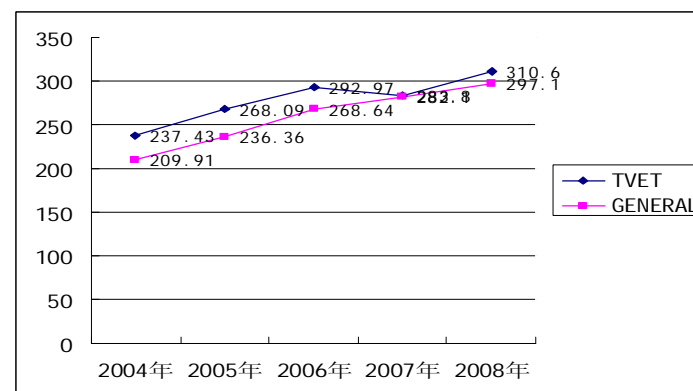


Figure6 quantity of first year students in tertiary level

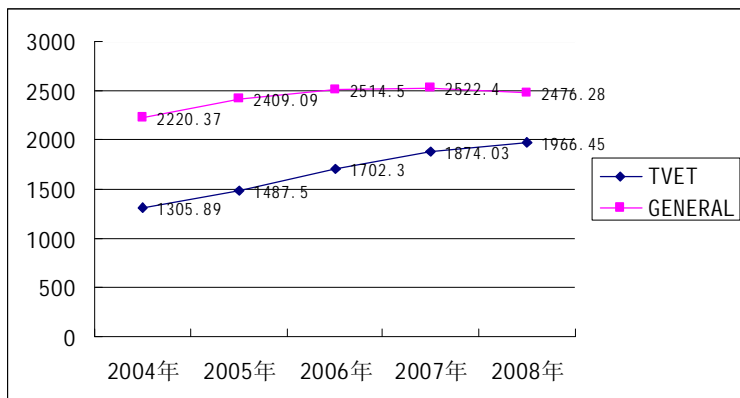


Figure7 quantity of in-campus students in secondary level

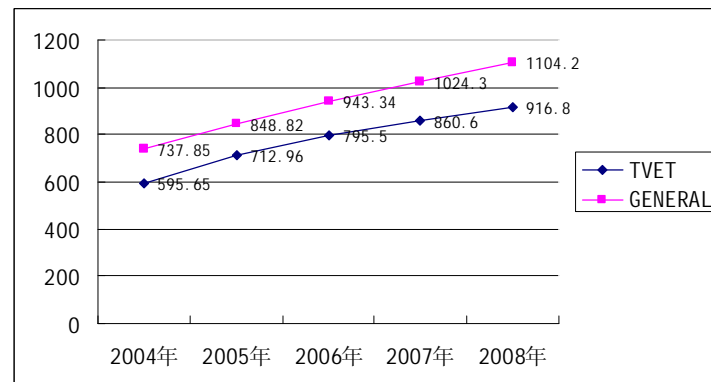


Figure8 quantity of in-campus students in tertiary level

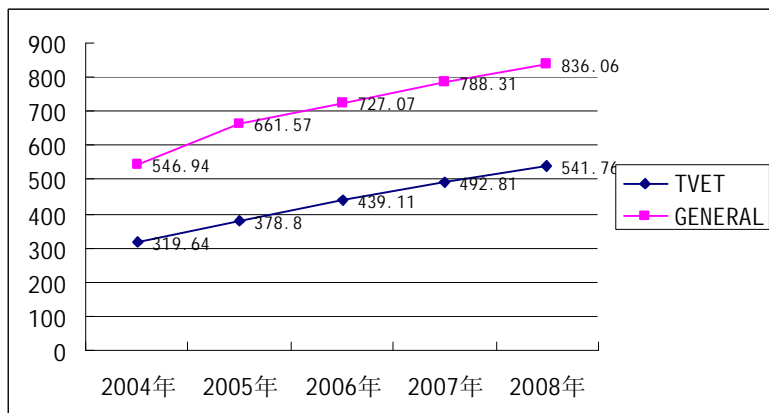


Figure9 quantity of graduates in secondary level

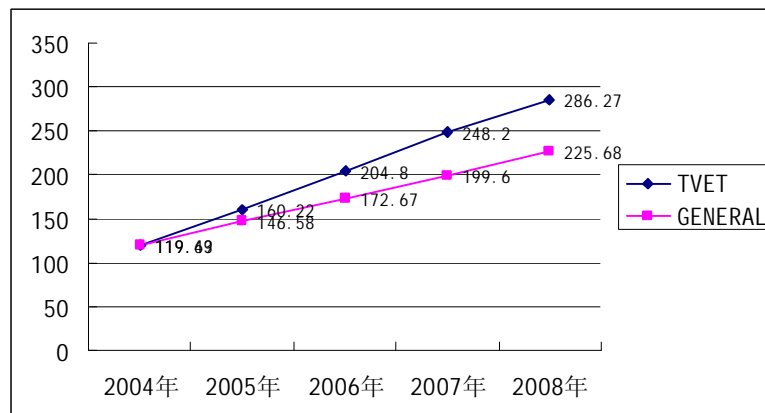


Figure10 quantity of graduates in tertiary level

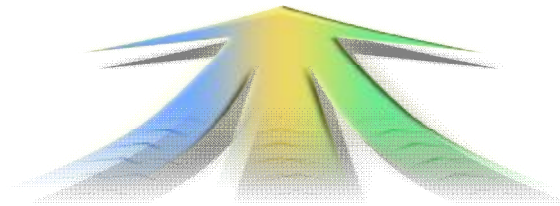


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Scientific concept of development



pollution



Unsustainable
production



migrants



Culture diversity

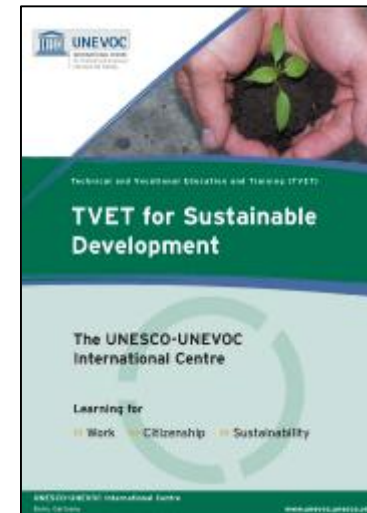




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TVET for SD: The important issue

TVET for all
TVET for work
TVET for citizenship
TVET for sustainable development





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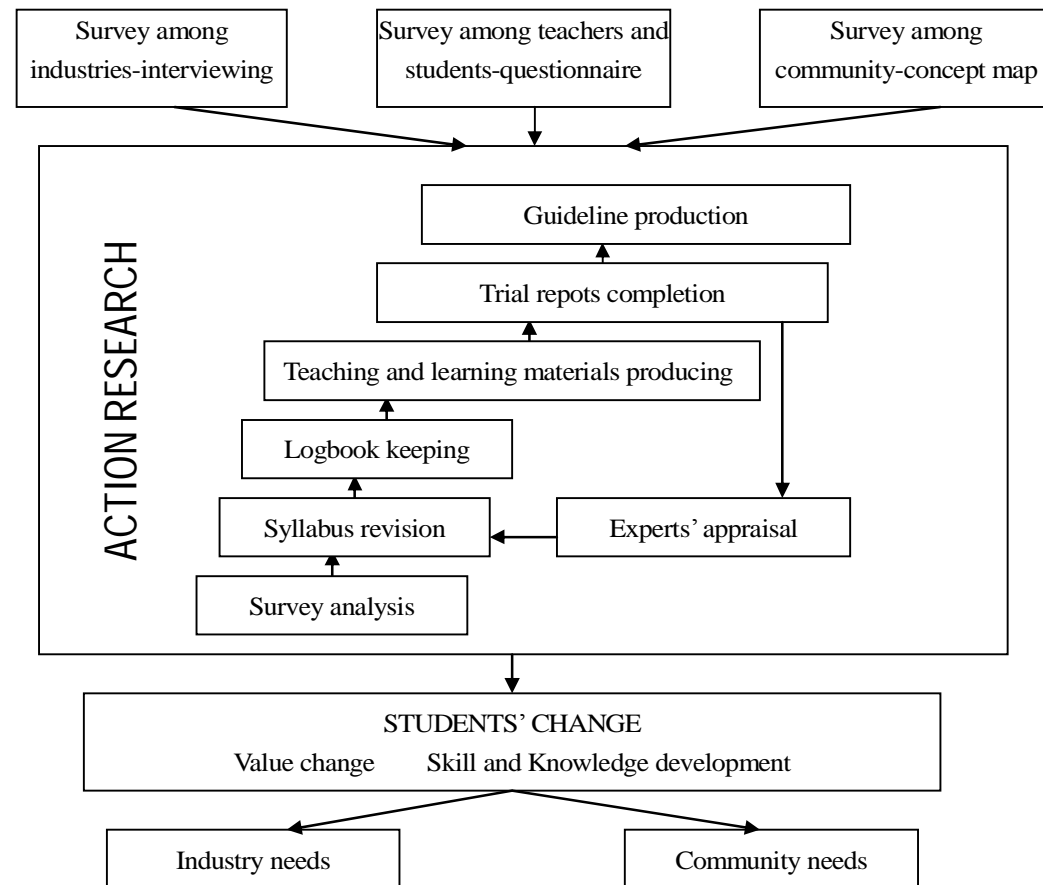
Research project financed by UNESCO UNEVOC

**Developing innovative approaches in Education for Sustainable Development
Curriculum reform in TVET China**





8 provinces , 11 institutes, 45 courses, more than 30 majors, more than 80 teachers involved





- Two breakthrough points plus Two changes
- One platform plus Diversified explorations
- Industry-school cooperated plus Teacher-student interacted
- Empirical study plus outcome orientation



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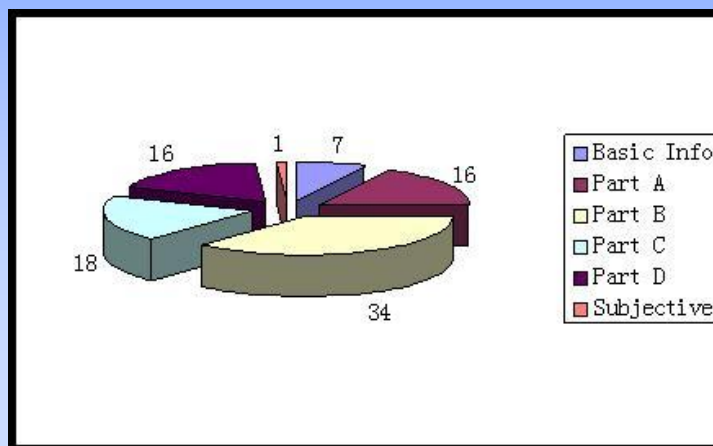


5 The action research in teaching and learning

Questionnaires to teachers and students.

11 institutes sent 6930 questionnaires to their students. 6542 students responded, for a 94.4% response rate. The highest response rate is in Guangdong light industry college, reached 96.8%.

11 institutes sent 678 questionnaires to their teachers. 638 teachers responded, for a 94.1% response rate. The highest response rate is in Beijing Vocational College of Finance and Commerce, reached 94.3%.



About survey

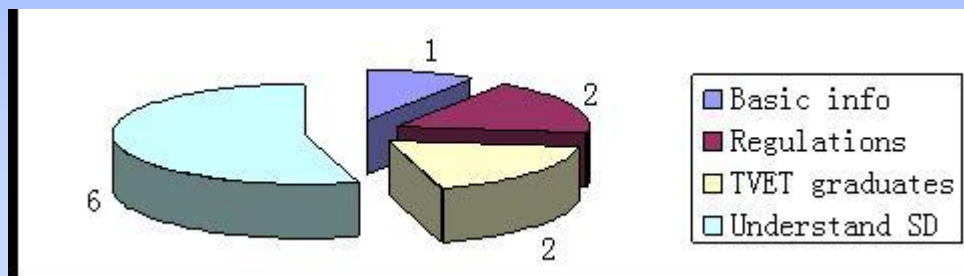


5 The action research in teaching and learning

About survey

Interviewing to industries.

Industry interview has been conducted by research network. 36 people from 11 industries have been interviewed. The industry includes mechanism, petro-chemistry, light-industry, transportation, chemistry, agriculture, sanitation, environment protection, international business, commerce food industry.



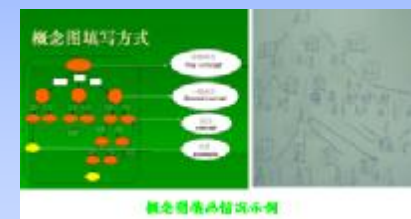
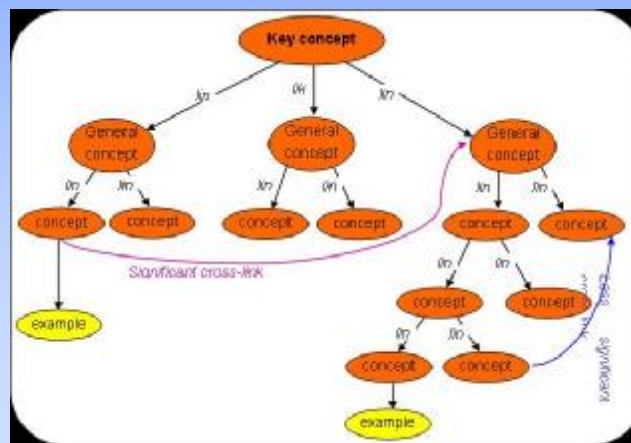


5 The action research in teaching and learning

Concept map to communities.

In light of the design of the survey, 3300 Concept map has been sent, responded 2486. Most of the drawers are TVET students' parents, relatives and friends.

About survey





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Contents reform

- 1.Green economy----green skills
- 2.Value education----citizenship
- 3.Traditional culture education
- 4.Relay to others



Pedagogical reform

- 1、 improving the employability
- 2、 improving the critical thinking
- 3、 improving the collaborating
- 4、 improving the problem-solving
- 5、 improving the sustainable learning

Out-the-school activities ICT application



Case study

Case 1 Auto air conditioner by Mr. Liang Renjian from Guangdong prov.



The main points of the reform for SD:

At the beginning of the course learning, teacher and students discuss the relationship among global warming, climate change and greenhouse gas emissions; the relationship between greenhouse gas emissions and the use of auto air conditioner. Following introduction conducts the notion and thought of improving air conditioner for saving energy and protecting environment.

Understanding the principle of changeable cubage compressor from the angle of environment protection.

Enhancing the understanding of miniaturization of evaporator and condensator by reducing the usage of refrigerant.

Comparing the differences between R22 and R134a Refrigerating System to improve the cognition.

Getting the skills to refit the R22 to R134a.



Case study

Case 1 Auto air conditioner by Mr. Liang Renjian from Guangdong prov.



Brief comments:

The possession quantity of cars have been blooming in China especially in city. In Beijing for example, more than 1000 new private cars have been purchased everyday. So the environment problem regarding the automobiles is getting serious. This course namely auto conditioner infused the environment protection into the contents. Leading the students to understand the importance of improving the conditioner for the better environment. More important, it provided the technical solution to reduce the negative influence from the conditioner and train the students to get the skill for SD.



Case study

Case 2 Analysis on artworks market By Mr.Zhu Hongliang from Zhejiang prov.



The main points of the reform for SD:

In the content of decision-making for operating artworks, infusing the notion of brand, creditability. Taking the social accountability by avoiding cheating and pirating. Adding the contents of avoiding the speculation and illegal collusion in the auction of artwork market.



Case study

Case 2 Analysis on artworks market By Mr.Zhu Hongliang from Zhejiang prov.



Brief comments:

With the rise of people's living standard in China, the artworks market has been development rapidly in China. Since the appraisal of antiques is very professional, the appreciation of the value is often influenced by many uncertain factors, so there are often heard a lot of illegal events and speculations in the market. Purify the trade environment and encourage a regular deals are becoming the key to the SD of this industry. So embedding those into the course is timely and meaningful.



Case study

Case 3

Tour guiding operation by Ms. Xiao Shuqing from Shandong prov.



The main points of the reform for SD:

Not only learn the guiding knowledge and skill, but add how to dealing the conflicts during the travel.

Considering from two sides of the parties in position of SD. Smooth connection between accompany TG and local TG in order to avoid the mismatch during the travel.

Coordinate the interests among agency, tourist and other stakeholders to avoid the conflict.

Learning the skills to deal with the problems happened in tour business



Case study

Case 3 Tour guiding operation by Ms. Xiao Shuqing from Shandong prov.



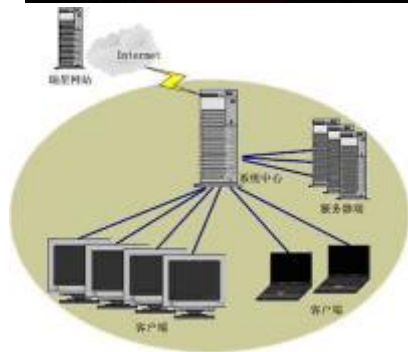
Brief comments:

Tourism is very important leisure to many Chinese people. But the business of tourism is still developing, some conflicts and dissatisfactions are often taken place. When we talk about the satisfaction from the view of tourist, it is not only the curiosity he/she is fulfilled, but also a happy mood and good relation with agency and others he/ she enjoyed. So the reform in this course will be good to the SD of tourism as well as the harmonious society.



Case study

Case 4 Development and Improvement of MIS By Mr. Guo Xingming from Zhejiang Prov.



Brief comments:

Modern science and Chinese traditions are treated as two things. The Rule and forms of classic Chinese poem is always very complicated and difficult. To some foreigners, it is hard to check his/her poem. This course combines the computer program design and Chinese traditional culture. It makes the program design meaningful, and makes the Chinese poem lively.



Case study

pedagogical reform on TVET for SD

Aiming	Pedagogies	Brief comments
1、improving the employability	Case-study approach situation-centred approach role-play approach comprehensive operating appr. site-visit approach work-project based teaching	Matching the work requirement by the effective approaches to improve the employability.
2、improving the critical thinking	Exploratory learning Material-searching approach Q & As Brain storming Stimulating learning	Encourage students to think in holistic and different ways.
3、improving the collaborating	Group discussion Team assignment Collaborative activities	To improve the team works. This is very important to those who live in a one-child family in China.
4、improving the problem-solving	Learning by Doing Problem-solving topic-presentation	The training of real doing and innovation will fulfill the long-term needs of students' development.
5、improving the sustainable learning	Problem-seeking Information sorting Self learning Self evaluation	Learning to learn



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Inst.	Teacher	Name of attainment	Form of attainment	Level
SZP	Liu hongyan	International Marketing	Excellent course	National
SZP	Wang Lijie	Printing Process	Excellent course	National
CIPC	Liu Hong	Program design and operation to computerised controlled manufacture	Excellent course	National
SZP	Wang Lijie	Demonstrative construction in major of printing technology	research project	National
HVTC	Zhou Xi aolong	practical training for building operation	textbook	National
GITC	Liang Renjian	Principle and repair skill of automotive air conditioner	textbook	National
ZJTIE	Guo Xingming	Development and Improvement of MIS	textbook	National
HVTC	Zhou Xi aolong	Building operation	Excellent course	provincial
ZJTIE	Guo Xingming	Development and Improvement of MIS	Excellent course	provincial
ZJTIE	Guo Xingming	The computer program development of Chinese poetry rhyme reviewing	cultural heritage application	provincial
ZJTIE	Huang Chunlin	Action research on TVET for SD	research project	provincial
CIPC	Liu Hong	Reform on Program design and operation to computerised controlled manufacture	research project	provincial
CIPC	Liu Hong	Criteria for the course of Program design and operation to computerised controlled manufacture	Education award	provincial
HVTC	Wu Yun	Textile foreign trade merchandising practices	textbook	provincial
ZJTIE	Huang Chunlin	Action research of curriculum reform for SD of TVET	paper	national
ZJTIE	Huang Chunlin	New exploration on TVET for SD	paper	national
SZP	Wang Lijie	reform on packing engineering instruction	paper	national
HVTC	Lu Min	English competition for students	Award	provincial



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- Sustainable development is a very important part of our national development strategy ;
- TVET in China has shared a big portion in the education system;
- It is meaningful to carry out the curriculum reform on TVET for SD in China;
- Although the trial time was limited, but we can see that the fruitful outcomes from teachers' concrete experiences are clearly;
- It is a basic platform for the further research in the curriculum and expansion to the other institutes and curriculum in China.



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Thank you for your attention

