

# The construction and application of digital course on ICVE platform—taking the course of health education and health promotion as an example

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**Abstract:** Health education and health promotion is an important core course for health management and other related majors in vocational colleges. It focuses on training students' skills in social mobilization, health communication, health consultation, health education and so on, which combines theory, foundation and application together. In the face of the national educational information requirements and the rapid development of Internet technology, the traditional teaching model cannot fully meet the needs of teachers and students. This paper introduces the construction of digital courses based on ICVE platform from the aspects of course orientation, online teaching resource construction, teaching implementation and assessment. Through the exploration of teaching practice to start a new model of online and offline teaching, the goal of course construction has been achieved, and good teaching results have been achieved.

**Keywords:** ICVE Platform, Digital Course, Health Education and Health Promotion

## 1. Introduction

With the development of the Internet and cloud technology, all industries have stepped into the construction of the network, let alone the education industry. *The 14th Five-year Plan for National Informatization* issued by the Central Cyberspace Affairs Committee in 2022 mentioned the target of “Promoting the education and teaching reform of the integration of information technology, intelligent technology and education and teaching.”<sup>[1]</sup> ICVE platform is a platform entrusted by the Ministry of Education to the construction and operation of Higher Education Press, which is very popular now in China in the aspect of vocational education.

Health Education and health promotion is one of the three measures to prevent and control diseases, and it is an important strategy to reduce the burden of diseases in the first 20 years of the 21st century<sup>[2]</sup>. Therefore, the course Health Education and Health Promotion (abbreviated as HEHP) is very important and outstanding for improving the professional quality and core competence of future health industry practitioners, and it is of great significance to promoting people's health.

## 2. Analysis of the problems existing in the traditional teaching of HEHP

### 2.1. Teaching materials are scattered

Traditionally the teaching material for HEHP includes textbooks, PPT and exercises made by teachers, and videos and other material from online sources, which are scattered in the class within the limited time, or chat files in QQ/ Wechat (popular communication software) group that are hard to find, which are not conducive for students to study.

### 2.2. Students' self-directed learning is insufficient

Compared with undergraduate students, students in vocational colleges have a greater weakness in self-directed learning. With the above problems of scattered resources, students' active learning motivation is further weakened due to the limited class time and obstacles in the collection of spare

resources, making the learning effect not obvious.

### ***2.3. Evaluation of learning is subjective***

Usually, there are about 80 students in one class and teachers are not able to take care of everyone, which inevitably makes the students' class performance evaluation subjective. Furthermore, it is very difficult for teachers to evaluate students' self-directed learning in the traditional way. These together make the final evaluation less accurate and objective.

## **3. The advantage of ICVE platform**

ICVE platform is a platform entrusted to the construction and operation of higher education press by the Ministry of Education and can solve the problems mentioned above.

### ***3.1. Massive online resources***

As one of the official vocational education platforms, it contains massive online teaching/ learning resources covering all disciplines from almost all vocational colleges in China. This provides great convenience for teachers to find the most suitable teaching resources, which help to improve the quality of teaching and students' learning results.

### ***3.2. A suitable platform for students' self-directed learning***

By using ICVE, students can access all the materials (PPT, exercises, videos, pictures, etc.) uploaded by their teachers at any time, and complete all learning and evaluation processes online, including pre-class study, class interaction, after-class homework, tests, exams and so on. Students can log in and study on ICVE platform via cellphone, computers, table computers, which provides great benefit for them to study with only textbook and ICVE platform at anytime and anyplace.

### ***3.3. Standard study evaluation***

Different from traditional evaluation, the ICVE platform can record all students' self-directed study time length, as well as students' performance in class. It can also automatically mark students' objective test, which can avoid human error. This is much more standard and objective compared with traditional evaluation way.

## **4. The construction and application of HEHP on ICVE platform**

### ***4.1. The construction of HEHP***

#### ***4.1.1. Course position***

HEHP is the core course of health management major in Guangdong Food and Drug Vocational College (abbreviated as GFDVC), and the course content includes the definition of HEHP and its status quo in China, health related behavior and behavior change theory, health communication, and the formulation and implementation of KAP questionnaire, etc. After the study, students should master basic communication skills (mainly consultation and public speaking skills), and know how to conduct HEHP in the related work area (e.g. hospital, community healthcare center).

#### ***4.1.2. Online teaching resource construction***

In ICVE platform, there are four sub-platforms: vocational education digital learning center (abbreviated as VEDLC), vocational education cloud (abbreviated as VEC), cloud classroom and MOOC college, as shown in Figure 1. The VEDLC is a resource-based database construction and resource-sharing platform, on which teachers can download and upload materials that can be used by all ICVE users. The VEC is an on-campus SPOC course platform, on which teachers can build their courses only accessible to school students, which is different from MOOC college, open to the public. And the cloud classroom is a platform for realizing in-depth classroom interaction based on VEC, which of course can only be available to school students.

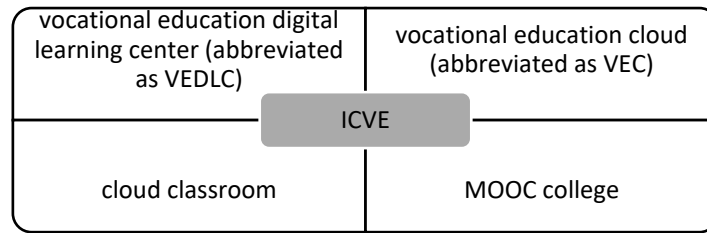


Figure 1: Modules of ICVE platform

The course HEHP mainly utilized three sub-platforms of ICVE platform, namely VEDLC, VEC, cloud classroom. First of all, it is necessary to build the course framework and upload it to the VEDLC, and then upload the corresponding teaching resources in the corresponding place of the framework. The structure of HEHP is shown in Table 1, and resource numbers are shown in Table 2.

Table 1: HEHP course structure

Course module	Content
1. Overview of HEHP	Overview of HEHP
2. Basic theory of HEHP	2.1 Health related behavior and behavior change theory
	2.2 Health communication
	2.3 Addictive behavior
	2.4 Design, implementation and evaluation of HEHP programs
3. Specific implementation of HEHP	3.1 Hospital HEHP
	3.2 Community HEHP
	3.3 Formulation and implementation of KAP questionnaire

Table 2: The construction of HEHP resources

Resource	Numbers
PPT	16
Course micro classes	3
Question bank resources	121
Videos	7
Document materials	18

#### 4.2. Teaching implementation

The teaching process of this course can be divided into three stages: pre-class, in class and after-class, as shown in Figure 2.

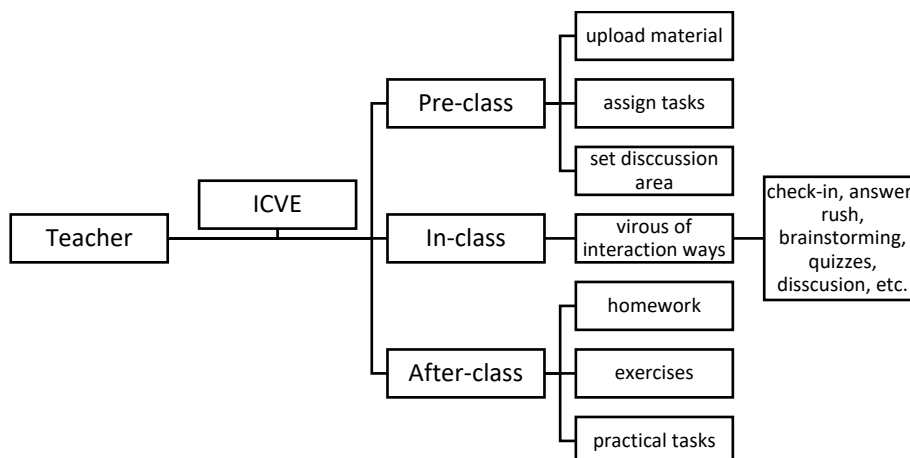


Figure 2: Teaching implementation of HEHP

In pre-class stage, pre-class tasks will be posted to VEC, materials uploaded include PPT, reference

materials, video, etc. Students need to complete self-study, and complete pre-class test or knowledge discussions. In addition, students can leave messages for interaction in the discussion area when they encounter difficult problems. Teachers will adjust and improve the teaching activities according to the feedback of test results or discussions.

In the next stage, at first, teachers use the check-in function to quickly master the students' attendance; using the answer-rush function to make the students recall the main points of the last lesson. Then by functions like questions, brainstorming, quizzes and so on, classroom atmosphere can be activated, teaching and study rhythm adjusted, so does knowledge and skills be consolidated. In the summary section, students can complete mind mapping by discussion function, and all the class can see each other's answers. Teachers can pick the most outstanding works while students can all learn intuitively.

In after-class stage, homework like exercises, discussions, team work, tests and so on will be assigned to students, from which students can understand the gains and deficiencies in the learning process, and teachers can give in-time guidance according to students' performance.

## 5. The teaching effect of HEHP on ICVE platform

To exam the teaching effect of HEHP, the evaluation of students' study is of great importance, in which a scientific and reasonable evaluation plays the key role. The ICVE platform can automatically record students' study time length and students' pre-class, in-class and after-class performance can be graded manually or procedurally, in which students' and teachers can give marks for others. When it comes to the final evaluation, teachers can set their own assessment weight on ICVE, which will calculate and present the final marks automatically in 2 seconds once click on the "OK". The assessment weight of HEHP is shown in Table 3.

Table 3: HEHP assessment weight

Assessment	Content	Weight (%)
Process assessment	Self-directed learning	5
	In-class activity	15
	Homework	30
Summative assessment	Final exam	50

Students enrolled in 2020 are the first group using the ICVE platform to study HEHP, so take them as the experiment group and take those enrolled in 2019 as the control group. Software SPSS 19.0 was used to compare the final marks of two groups and the results are shown in Table 4, which shows that the marks of experiment group were significantly higher than those in the control group ( $P < 0.05$ ).

Table 4: Comparison of two groups' final marks

Group	Students number	Final marks	<i>t</i>	<i>P</i>
Control group	114	80.01 ± 6.68	4.831	0.000
Experiment group	86	84.05 ± 5.13		

## 6. Conclusions

ICVE platform is a great place for teachers and students to teach and learn, and it makes up the defect of traditional classroom teaching and breaks through the limitation of time and space<sup>[3]</sup>. By using ICVE, the new online-offline teaching mode is adopted in the course HEHP, and teaching measures are reformed in aspects of teaching design, teaching implementation and teaching evaluation. It activates the interaction between teachers and students, students among themselves. And students' enthusiasm, participation, team cooperation ability and the ability of innovation and exploration, as well as final marks, have all been optimized. Meanwhile, the comprehensive ability of teachers has been greatly enhanced. By learning excellent material from other colleges in China, and continuous teaching practice, teachers' information-based teaching ability has been greatly improved, further improving the quality of course teaching.

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