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# **Health Profession for 21 Century: Research on the Application and Efficiency of Global Health & National Health Conditions Education in Education Reform in PR China**

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## **Abstract:**

Traditional higher medical education cannot meet the requirements of cultivating students' abilities to think independently or learn actively, since it is unitary in pattern, dull in method and not comprehensive enough in content. The purpose of health education reform is to remedy traditional deficiencies by reforming patterns, methods and contents. Global, National Health Conditions Education (G&NHCE) is based on medical sociology. It pays attention to social attributes of medicine and health macro fields. In the process of implementation, we should investigate mass conditions, understand the customs, experience the farmers' emotion, concentrate on our own sphere and also look around the world. Then we can explore the 'Golden Apples' teaching method and a three-dimensional teaching model including "teaching, scientific research and social services" to innovate theories and methods in medical education. G&NHCE has cultivated and improved students' abilities of analyzing and solving problems independently, so the students' civic and social responsibilities and sense of mission as mainstay of the future are promoted. A new way of medical education reform has been explored by the Center for Health and Social Development at Peking University. It has been in operation for the past ten years.

**Key Words:** National Health Conditions Education, Medical Education Reform, Three-Dimensional Teaching Method, Golden Apple Teaching Method, Innovation

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## 1. INTRODUCTION

With the rapid development of society, the economy, science and culture in China, there is a need of high level medical personnel since the demand for health services is increasing. Higher medical education is responsible for cultivating medical personnel with high qualities (Lin, 2002). However, it cannot fulfill this mission. The traditional medical education model in China is “teaching-accepting”. The teaching content is a “three-stage” arrangement consisted by basic course, clinical professional class and clinical practice (Feng, 2008) which cannot meet the needs of modern medicine for medical personnel, since it neglects the social attributions of medicine and limits the abilities of medicos to think independently and study actively. So the key point of medical education reform is to explore the cultivating model of medical personnel to respond to the demands of social and medical development (Che et al., 2010). This paper will discuss a new medical education model - the national health conditions education - which is summarized by the Center for Global Health and Social Development Research and based on its efforts in education reform in the past ten years. It will introduce the connotation, significance, new model and method, steps of application, and effect of NHCE, in order to explore a new path for medical education.

## 2. THE NECESSITY OF NATIONAL HEALTH CONDITIONS EDUCATION

### 2.1 The Defects of Traditional Medical Education

The main defect of traditional medical education is the positioning of its subject-“teacher”. The teacher-centered method overemphasizes “teaching”, simply focuses on indoctrinating knowledge, is only concerned with the students’ mastery and inheritance of prior knowledge, and ignores the application and development of the knowledge (Zheng, 2010). This model not only weakens the confidence and autonomy of medicos, but also limits their divergent thinking which not help them to think independently or study actively. There are three particular defects of traditional medical education:

First of all, there is only one and the teaching method is boring.

Medicine is about solving the problems that are related to maintaining health. Its purpose is to cure and prevent diseases and improve body health. Since there are so many kinds of medical courses including a vast amount of knowledge, medicos feel overburdened. Under such pressure, medical education becomes a single model with students as assembly line workers, since it teaches in class only.

Secondly, it ignores the dominant position of students.

In the long process of “spoon-feed” teaching, teachers are transformed from guides to manipulators and students, who should be the subject, are transformed into controlees. Active study is changed into passive acceptance. Whether a course is successful or not depends only on the abilities of the teacher; students cannot fully use their subjective initiative. The teaching

process becomes a mission-directed action consisted of knowledge teaching, mechanical memorizing and exam response.

Thirdly, it values biology over humanities, which doesn't adapt with the transformation of the medical model.

With the transformation of the spectrum of diseases medicine is changing from the traditional biological model into a bio-social-psycho model. However, traditional medical education is still teaching the knowledge of human biology but neglecting the effect of the social environment on human psychology and health. Since the students have only studied biological medicine, they lack humanistic concepts; they have not adapted to the change of medical model.

## **2.2 The Connotation of NHCE**

To remedy its defects, medical education needs a systematical reform in model, content and method. The NHCE is a new path that is being explored in medical education reform. Traditional medical education only emphasizes the field of microbiology and neglects the macro health field, so it cannot help the students to establish the concept of "macro health", which refers to recognizing health problems by the regulation of connections and effect between the human body and its environment. It includes not only the health of the human body but also good ecological conditions, living environment, social environment and interpersonal relationships (Wen, 2009). In general, the NHCE puts its focus on the macro field, excluding the micro medical field. Specifically, it includes the construction of the medical system, the health security system, the hospital management system, international health, national social and economic development, and other macro problems, which can help the students to understand the health conditions of our country, improve their humanistic training, establish the concept of "macro health", and re-recognize the significant health issues that they should know but do not know even though they are close at hand. Then they can be enlightened and think deeply. It also can promote a global, development-focused, holistic and dialectical view of health and social development theory and practice. NHCE proposes to survey diseases from a global and social perspective, to avoid being limited in medical vision; in the process of disease research, it is also important to pay equal attention to both macro and micro fields, which requires the students not only to discuss the molecular level, clinical performance and treatment of diseases, but also to master the three-dimensional distribution of diseases including time, space and population and to understand the international epidemic status. Thus, the students can deeply understand the health policy of putting prevention in first place and setting the concept of "macro field". It also has a great significance for diagnosing diseases.

NHCE adopts the three-dimensional teaching model of "teaching, researching and serving society" and integrates them together. It helps the students not only to learn knowledge but also to utilize it. In this method, students' studies range from the 'wild field' to government authorities, from the chat of the masses to the related policies and regulations, and from the

implementation of basic medical institutions to understanding the strategies of competent leadership. When treating problems, students should give consideration to both micro details and macro levels, to combine the dull knowledge in books, policies and regulations with social reality and the feelings of common people. NHCE uses a new teaching method, the Golden Apple teaching method, which teaches according to the students' gifts, is principled by "only one who bursts with eagerness do I instruct; only one who bubbles with excitement, do I enlighten", and takes "learning by doing, doing by learning" (LBD&DBL) as the way of cultivation. Through providing necessary tools and sufficient trust and support, the method stimulates students' desire for knowledge and potential for active learning. Thus, both the learning effect of students and the guiding effect of teachers can be expressed, which cultivates the students' abilities to acquire knowledge actively and solve problems. Furthermore, the Golden Apple teaching method implicates the elements of the problem-based learning (PBL) method prevailing internationally (Hou et al., 2010). Moreover, In the Health Global and National Education, PBL can further be understood as population-based life sciences.

### **2.3 The Significance of NHCE in Medical Education Reform**

The purpose of medical education reform is to change the centurial medical education model which started at the beginning of last century in the USA and throughout the world. (Flexner.A,1910; Welch Whet al.,1915) It has great significance to develop NHCE in medical education reform, in order to change passive acceptance into active learning and exploration, by conquering the defects of old medical teaching model in form, content and method.

In the first place, NHCE connects medical education with national health conditions. It focuses on the macro field of health and takes solving the main current health problems as its object, which can remedy the micro-centered defect in medical education and cultivate the "macro health" concept of students. It directs the students to understand global health and the trend of social development, to put the Chinese health conditions under the background of world health development, to expand the learning perspective and macro vision of medicos, and to establish their global sense, national sense and responsibilities through reading WHO reports, world bank reports, government work reports and the Chinese health yearbook.

Secondly, NHCE is based on theoretical lectures, takes research and practice as the core, relies on a new education model and teaching method to teach theoretical knowledge and methodology to students, and combines the effect of students' subjective position with teachers' guidance. It motivates students to study actively, enhances their abilities in autonomous learning and innovation, and helps them to be concerned for the frontier, to face the future, to comprehend by analogy and to think dialectically; they have the critical consciousness to foster a scientific spirit and cross-disciplinary vision.

Thirdly, NHCE focuses on social attributes while bio-medicine focuses on biological attributes, which can help students to understand the factors that influence human health. It emphasizes a mode of integrated education which fuses together arts and science, western and Chinese

culture, and ancient and modern civilization, highlights humanities education, establishes cultural foundations, and enhances cultural confidence. It not only adapts to the requirements of the bio-social-psycho medical model for medical personnel, but also integrates traditional culture and modern elements together. The teacher instructs students to read classics including *Etiquettes for disciples*, *Historical records*, *The great learning*, *Mencius* and *Lecture Room* and takes students to hear the *New Year Concert* in the Great Hall of People. Students watch a series of interviews named *Virtues of Great Physicians* with academician Han Qide, to understand the spirit of practicing medicine to benefit mankind. In this way there is not only the inheritance and development of traditional culture but also the pioneering efforts which keep pace with the times. There is not only the recalling of outstanding historical figures but also the study of modern great masters and outstanding teachers. This edifies the sentiment of students and cultivates the feelings of “loving everyone and becoming close with the kind-hearted” one hand, the students are encouraged to have great ambition. On the other hand, they are required to build a solid foundation of knowledge, study step by step, and experience the philosophy of “The sun and moon being possessed of brilliancy, their light admitted even through an orifice illuminates. Flowing water is a thing which does not proceed till it has filled the hollows in its course” (translated by James Legge).

### 3. APPLICATION OF NATIONAL HEALTH CONDITIONS EDUCATION

Relying on courses like epidemiology, introduction to leadership science, mass communication and human resource management, research has been carried out since 2001 in Peking University Health Science Center, in terms of social practice and medical forums. A complete teaching system has been gradually formed that is the “three-dimensional” model and Golden Apple teaching method: “a model and a methodology”.

#### 3.1 The “Three-Dimensional” Model

The “three-dimension” model is a teaching model which integrates classroom teaching, research and serving society. It leads students to social practice from the classroom, encourages them to think independently, fosters social responsibility and improves their ability to combine theory and practice.

##### 3.1.1 Classroom teaching

In classroom teaching, teachers try to make boring theories such as medical sociology, the health security system, health system reform and mass communication more interesting and easier to understand, which requires the teacher to have both extensive knowledge and the ability to control language, and the students to listen consciously and make notes. It can help students to concentrate in class and master basic knowledge quickly.

##### 3.1.2 Research

Students can pick an important issue in a health area or frontier topics as their subject. Then, under the guidance of the teacher, they complete the opening report, interim report, field investigation, material collection, data sorting and analysis, and paper-writing. Rigorous research thinking and an exploring spirit can be fostered by receiving comprehensive research training.

### **3.1.3 Serving society**

The teacher takes students out of the traditional classrooms - the 'one chalk, three inches platform' style - to serve the society through social practice. The social practice of NHCE, which has integrated the Golden Apple teaching method, is different from the traditional teaching model. It lets students step into society by themselves and improves their ability to solve problems, by bringing the teachers' directive function and students' subjective initiative into full play.

## **3.2 Golden Apple Teaching Method**

Golden Apple is the specific teaching method in NHCE aimed at bringing students' initiative into full play. The key of this method is that students should complete the research by themselves and improve their efficiency under the guidance of their teacher. The method includes a series of specific aspects.

### **3.2.1 Regular meeting with teachers**

Meetings are arranged about every 2-4 weeks. A subject is chosen before every meeting. During the meeting, students collect and sort out data and introduce their study experience, after which teachers make comments. This method is similar to microteaching, in which teachers' comments are very specific and directive. The method enables students to understand the essence of a subject in a very short time and improves students' ability to think, and to analyze and solve problems. The PPT report form is lively and vivid which encourages a more active and serious study attitude.

### **3.2.2 Group discussion to share students' experiences**

The teacher assigns a subject after class and asks students to discuss the topic in groups. Every group submits a report after summing up what they have discussed. The discussion enhances students' team spirit and improves group leaders' art of leadership. Moreover, through discussion, students of different levels and majors will improve communication and learn from each other. For example, part-time students are more steady and effective, while full-time students are more rigorous and more solid in foundational knowledge.

### **3.2.3 Role playing-training of rhetoric and confidence**

Role play is used when analyzing some specific topics in class. In this model, students use "change-place and reflect" to blend into a real situation and to know the people and environment, which will deepen their understanding of the NHCE. For instance, it can enhance the social responsibility and attitude of students by taking 'if you are a patient, dean, or health

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minister...’ as the topic; it can improve their courage and conquer shyness, as well as the expression of language by a brief self-introduction before beginning their report.

### **3.2.4 Advance with the times**

With a close eye on the development of frontier subjects, universities should take advantage of educational resources, encourage students to broaden their vision and range of knowledge, and conquer the defect of out-of-date designated textbook. Students should compile the data they collect during research into interesting materials and upgrade it with the times for future use. Students’ ability to collect, file and edit will be fostered during this process because compiling itself is a learning process. When searching materials, students can understand the knowledge comprehensively and know how to explore the origin and development of things.

### **3.2.5 Class extension—teaching in field**

The teacher takes students to various academic activities such as academic forums and academic seminars to make sure they keep close touch with the latest academic developments. By taking part in such activities, students broaden their vision, improve their communication level and gain knowledge. By taking part in field research, students get a chance to understand what they learnt in the classroom.

## **3.3 Concrete Steps of NHCE**

In the process of NHCE, the Golden Apple teaching method is adopted by the teacher in the light of the “three-dimensional” teaching model. On the basis of classroom teaching, teacher attaches high importance to improving students’ learning capacity and self-cultivation. The Golden Apple teaching method is just like picking apples. During the process, the teacher tells students where the apples and ladders are and encourages them to pick apples themselves. The principle of the method is “only one who bursts with eagerness do I instruct; only one who bubbles with excitement, do I enlighten”.

Social practice illustrates how the concrete steps of NHCE are introduced. Here, the “teachers’ early guidance-students’ social practice-teachers’ summary and analysis” model is adopted. In the first phase, students should understand the meaning of social practice and make adequate preparation; in the second phase, the teacher should give full play to initiative and creativity; finally, students and teachers should communicate and make a summary, just like ‘writing papers’.

### **3.3.1 Early-stage preparations**

In this phase, teachers give lessons on basic theories such as health related issues, methods for social investigation, data entry and management and statistical analysis techniques. With the guidance of teachers, students read reports such as WHO reports, World Bank reports, government work reports, the Year Book of Health, bids to the national natural science fund, and bids to the national philosophy social science fund. Then they select the subject of social

practice, or the teacher can assign a subject. Students collect and sort materials and complete the plan by themselves. The plan should contain the specific contents, time and place and schedule of the social practice. Teachers should comment on the plan in group meetings. Finally, under the guidance of teachers, students complete some necessary materials, such as questionnaires. Students get familiar with the whole process through role-playing. Before the real practice, the teacher will emphasize some principles, especially safety, and encourage them to show their scientific spirit and humanistic feelings of “with global and local perspectives, teacher and students go to the grassroots to show concern for people’s livelihood and well-being”.

### **3.3.2 Process of the social practice**

Students will be divided into several groups before heading to the location of the social practice. They complete the questionnaire, specific sample survey and institution interview by themselves. During the process, students should record words, images and tapes. After every survey, the teacher organizes students to examine the questionnaire and summarize the problems, and answers students’ questions. The teacher should then give advice to the next step and adjust the plan accordingly.

### **3.3.3 Final summary**

After the practice, the teacher will organize students to sort the characters and pictures of investigation, and teach them the basic knowledge of inputting questionnaires and analyzing data. In these processes, the students of higher grades who have already been carefully trained will help as teaching assistants. This can form a mode of teaching, helping and mentoring among the students to cultivate their cooperative spirit, while, forming a virtuous circle of continuous development of knowledge and experience. Then, under the direction of teacher, students will finish their practice report or papers independently, and sum up the problems that existed in the process of practice.

Through an entire social practice, this teaching method not only lets the students become familiar with and carry out the whole research process including reading bids, writing reviews, pre-investigation, field investigation, inputting data and analyzing it, but also helps the students understand health conditions in China and increases their knowledge of medical sociology. At the same time, their scientific spirit and humane cultivation will be subconsciously enhanced.

## **4. THE EFFECTS OF NATIONAL HEALTH CONDITIONS EDUCATION**

Since the development of NHCE, a new teaching management mechanism has developed that has an active teaching concept, active teaching object and flexible management method. It is beneficial for teaching and studying creatively, developing the character, potential and specialties of students, changing potential into external ability, and purchasing all-round development. It has strengthened the spirit of innovation and abilities of practice, encouraging teachers to add scientific achievement and subject dynamic into a teaching process requiring

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research training to be put into the teaching plan. It forms a system which transforms teaching management from group mode to individual, reflecting the educational concept of taking students' development as the subjects, teaching according to their talents and quality education.

NHCE has cultivated hundreds of students from the schools of public health, basic medical sciences, clinical medicine, stomatology, pharmaceutical sciences, nursing, government, law, economics, life sciences, mathematical sciences, departments of sociology, philosophy, biomedical English etc. It has had a good effect since it was developed in Peking University eleven years ago. With the direction of teacher, the students have demonstrated their initiative and achieved many awards. For example, the 8-years medical undergraduates won the '*advanced team reward*' of Peking University and Health Science Center of Peking University for 6 years. Students in other majors have gained the highest collective prize of *social practice college students in Beijing*, the advanced individual prize of *capital university students' social practice*, and the first, second and third place of the *5.4 challenge cup* competition of Peking University. Besides these rewards, the students also have acquired a lot of knowledge and improved their research abilities through participation in scientific research; they have experienced national and international health conditions and clearly strengthened their medical humanities quality. Some of the students cultivated by this method that have already had BA or graduate degrees have gone for further study abroad. Some of them have become the backbones of state organs, research institutes and medical departments, and some have taken the responsibility to cultivate students after becoming researchers or associate professors. The students, who have gone for further study abroad, were encouraged by their teachers to promote continuous and effective communication between China and the world, by international academic exchange and cultural transfer. When they accomplish success and fame, they should come back to serve their own nation and people.

The teacher takes the words of "nothing is happier than teaching the best and brightest of students" as the greatest wish and life goal, accumulates teaching experiences and goes through a mill to have the wisdom of recognizing swift horse when cultivating students. That is: when teaching others, you can improve yourself. A sincere payment must have good returns. The NHCE mode and method has received the attention and recognition of the education department and school. The teacher has obtained the prize of outstanding teacher of Peking University of Health Science Center and the honorary title of 'education pioneer of teaching' and 'education pioneer of innovation' of the Capital.

There are the real reasons of making the Education Reform: the education manages to provide students with global vision and perspective, and broad knowledge of the wider world (e.g., science, culture, and society) as well as in-depth study in a specific area of interest. It is an approach to learning that empowers individuals and prepares them to deal with diversity, complexity, and change. The students of Peking University cultivated by the Three-Dimensional Teaching Model and Golden Apple Teaching Method are good citizens

with “excellent moral character+ solid professional knowledge + cross-disciplinary concepts and approaches + intellectual and practical skills + analytical and problem-solving ability + sense of social responsibility +sincere heart for serving the society”. Being a teacher is being present at the creation, when the clay beings to breathe in Peking University there one who teaches occasionally finds himself catching his breath with them when the students grow and change in front of teacher and rare student who walks into teacher’s life, and begins to breath. This is, and ought to be, the point of higher education.

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