



Study on the Case Teaching Method and the Sustainable Development Education for the Inner Mongol Colleges

Qingguo Meng

School of Education

Huazhong University of Science and Technology

Wuhan 430074, China

Youth College of Political Science of Inner Mongolia Normal University

Hohhot 010051, China

The research is financed by the Inner Mongolia Sustainable Development Management Factors Research in the 2005 Social Science Plan of Inner Mongolia Autonomous Region (No.0521). (Sponsoring information)

Abstract

Based on the case, this article expatiated on the criticalness, the transformation and the practicalness of the sustainable development education. Through the development research of the Inner Mongol cases, we pointed out the case method of teaching was a sort of teaching mode with significant efficiency to realize the multiple objects of the sustainable development education for the Inner Mongol colleges, put forward the objective system and the tenet of the sustainable development education which was the remodeling of the emotion and the value view to promote the establishment of the core idea of the sustainable development education.

Keywords: Education for sustainable development, Intergenerational equity, Criticalness, Case method of teaching, Transformation

The sustainable development education is the education for the sustainable development, and it is first the sustainable development of the education, and it is different with the unilateral and oriented environment education and development education. The sustainable development education is the learning process with a view to the economy, ecology, justice and future of the society, and in this process, learners can study how to make decisions, and the core task of the sustainable development education is to establish the thinking ability oriented towards the future.

At present, the sustainable development education of China is still on the start level, and the establishment of the college environment courses basically aims at the specialty. According to the statistics, only about 10% colleges in Chinese colleges set up the courses about the environment science, but the real trans-subjects sustainable development courses are still on the start level in individual colleges, and the practice and the research about the teaching method, teaching material development and teachers training are almost blank. The sustainable development education of Inner Mongol colleges is still in the stage of theoretical introduction and practical exploration.

According to the macro theoretic characteristic of the sustainable development, under the influence of traditional teaching mode, the teaching aiming at this concept or knowledge system easily becomes formalistic theoretic and knowledge infusion and concept deduction, but as viewed from the micro aspect, the sustainable development more emphasizes the active participations of local and community citizens, and makes it develop as the practice subject studying something in order to apply it. Many characteristics of the case teaching method fulfill the special demands of the sustainable development education, and offer a breakthrough for the promotion of the sustainable development education. In addition, its flexible and innovational characters indicate the direction for the practice and the enhancement of the teaching material compiling and quality education.

The case teaching method is a sort of teaching method which the teaching party and the studying party directly participate in and discuss the case or difficult questions and cultivate learners' practical application ability. And it can retrospect to the time of ancient Greece, and Socrates adopted the teaching methods such as the dialog mode, the discussion method, the heuristic mode of teaching in his teaching process, and emphasized to cultivate students' independent thinking ability, suspicious and critical spirit, and his teaching method was very important to form the western education and the academic tradition. Therefore, the case teaching method is also called as the "Socratic

method”, and it is the main teaching method in the law schools of the Anglo-American legal system, and it is also extended in the commercial colleges. The practices indicated that the case teaching method could be successfully applied and pushed in the sustainable development.

Inner Mongol Autonomous Region transverses northeast, north China and northwest of China, and most regions are located in the sensitive belt of the global change, and the ecological environment is frangible. According to Chinese sustainable development strategic report (2006) by the Chinese Academy of Sciences Sustainable Development Research Group, in the Region, the comprehensive performance index of the resource environment was 144.4, and it ranked in the 26th, and the science and technology strength ranked in 26th, and the total ability of the regional sustainable development ranked in 23rd. The mine resource exploitation and smelting belonged to the industry with high energy consumption and high pollution in the heavy industry, and it largely influences the ecological environment. For the environment and the development, the total ability of the science and the sustainable development are core factors, and the Inner Mongol sustainable development will be seriously restricted by the subjective conditions and the objective conditions in the present special transformation stage.

Aiming at above actualities, the introduction of the educational variable will exert long-term and important function to the sustainability of the local development, and the introduction of the sustainable development education in the higher education system is the innovational action in the existing course mode, and as viewed from the long term, the exploring thinking of the educational reform may be the important factor to push this sort of transformation.

The sustainable development education possesses many new characteristics different with traditional education mode, and it requires a sort of new view to study and explore the education. In this article, we try to explain and break through the sustainable development education from environment practice and the teaching case of Inner Mongolia.

1. The case teaching must accord with the objective frame of the sustainable development education for Inner Mongol colleges

1.1 The target of the sustainable development education for Inner Mongol colleges

As the main field to cultivate the middle and super talents, colleges are very important to push the sustainable development education, and aiming at the problem how to change the actuality of the sustainable development education to the concept and practice popularized by the society, the education constitution must put forward and concretize the target of the sustainable development education.

The undeveloped Inner Mongol region urgently needs the talents with the reform idea and the sustainable development concept to lead the implementation of the local sustainable development strategy. The important task of Inner Mongol colleges is to cultivate the value view, behavior and living mode according with above ideas and concepts, so the target of the sustainable development education can be divided into four dimensions such as knowledge, thinking, culture and responsibility (seen in Figure 1).

Four dimensional targets A, B, C and D escalate from A to D, and D is the highest target which is to form learner’s responsibility for the biological environment and promote the implementation of the sustainable development concept. Target A emphasizes the individual sensitivity and comprehensive cognition to the environment, and popularizes the diffusion of the knowledge in the whole society, and forms the significant characteristics different with other knowledge structures. For example, the concept of the ecological footprint is sort of special index to measure the sustainable development. The system thinking of the Target B is the necessary ability factor contained by the sustainable development education, and it requires taking the sustainable development as a changeable process, and continually putting forward the optimal project of the optimal solution according with the dynamic development. Target C takes up with the optimal integration of multiple national cultures and avoids losing the justice and benefits of the next generation in the process of the cultural integration.

In the multiple-objective frame, the cultivation of the communication skills and the formation of the systematical thinking are orientated on the human resource with potential management ability, so the excellent talents will show themselves and become the leading power in the local transformation development.

1.2 The homogeneity of the case teaching method and the sustainable development education largely increases the possibility of the extension in the sustainable development education process and ensures it can accord with the target frame system to the largest extent

The sustainable development education is significantly different with the traditional education, and it emphasizes the establishment and the practice of many value views such as balance, justice, fair, harmony and political consultation, and the education receivers should be the transformation factor in certain region or the society. In addition, it is also a sort of education of introspectiveness and criticalness, and it encourages animadverting on the social current malpractice and the traditional idea and emphasizes the cultivation of the reform ability.

The sustainable development course includes abundant case resources, and the cases in different regions are not only

different but also representative. For the global background, the concept is one of the biggest cases.

As a sort of teaching method emphasizing the practice and ability, the case teaching method can lead students to analyze, judge and make decision independently, break through the restriction of the traditional teaching method, and promote the behavior transformation of the teaching and studying in the democratic participation, and transform from traditional teacher-oriented to the students' active participation. Sorts of characteristics of the case teaching method accord with the sustainable development education, and the homogeneity of both method ensures this sort of teaching method can more flexibly serve for the target of the sustainable development education (seen in Table 1).

2. The selection and development of the case should accord with the actuality and the requirement of the Inner Mongol sustainable development education

The selection of the Inner Mongol sustainable development case should give priority to local classic real examples, and the design and the development of the case should combine with local situation. According to the humanistic, ecological environment and resource characters of Inner Mongolia, we should search, process and re-create the original materials, and realize the multiple-subject character and the science character of the information. The following case is the real example of the Inner Mongolia.

[The historical variance case of the certain village in Inner Mongolia]

The village was a rangeland with abundant grasses and trees, and it includes three natural villages. In the middle and late of 1980s, the village was in the peak period of the planned economy, and the amount of livestock on hand achieved 63000, and the Han national population was 1730, and the Mongol amount was about 800, and the land area achieved about 1300 square kilometers, and the south of the Sumu government had the forest with about 8 million square meters with poplar tree, elm and desert dates, the traditional Mongol Nadam Fair every year, cultural and artistic performances, and many competitive activities such as horse race, tumbling and toxophily. In the late of 1980s, with the deepening of economic reform and the opening of the livestock feed, and in the 1990s, the amount of shepherd had exceeded ten thousands.

[a. The introduction of the governmental background knowledge]

In the term of planned economy, most administrative cadres and technical cadres were junior college or technical secondary school graduates, and they possessed quite abundant special knowledge about the farming medicine. According to the professional measurement, the livestock quantity in every square kilometer was 1 to 2 sheep. And the village uniformly managed the livestock, and it was conformed as the cultivation base of the half fine wool sheep. Through many ecological-protective measures such as stable breeding, amount limitation, base establishment of grain feeds and green feeds, the stock raising realized virtuous circle.

Problems:

- 1) In which aspects, the government can promote the protection and optimization of the ecological environment? Is that only the responsibility of the government?
- 2) In the tendency of the present public management marketization, how the governments do to protect the environment?

[b. The integration of national cultures]

Since 1970s, large numbers of Han people continually transferred to this place, and they developed a piece of land in the southeast of the forest to plant the food supplies and vegetables, and Mongol people begun to eat more wheaten foods and vegetables and Han people ate more meat products. After 1980s, the government begun to run the school, and there were about 400 students and more than 50 teachers and the Mongol school. However, more and more Mongol students begun to study Chinese language, and the Nadam Fair in every year was stopped.

Problems: What are the advantages and disadvantages of the national cultural integration? Which factors can promote the disappearance of the cultural phenomena?

Profound problem: What are the core factor and the value view of the Mongol culture? What specialties are embodied in the culture? How can we inherit good cultural traditions and value views?

[c. The variances of the environment and the climate]

Before 1990s, there were one or two sand blown, and the sand earths were not more, and there were rains in the summer which would induce the flood, and there were heavy snows in the winter which was the view in each year. After that, the climate gradually became warm, and because of excessive reclamations and feedings, the grass field was deserted and the speed of the desertification was surprising. Many families were forced to migrate, and the grassland dried in successive years and there were almost no snows in the winter.

Problems: 1) Facing the global phenomena of climate change, whether the human being are only waiting to accept?

What revelation does the sustainable development on the regional layer offer?

2) As one of main reasons of the environment depravation, how we recollect the value view of the traditional people-orientation? What values does the environment embody?

[d. The development of the commercial economy]

The whole time of 1980s was the period which was the most flourishing term, and the population achieved about 3000. Since 1985, the family-contract responsibility system was introduced, and the development of the stockbreeding had entered into the unordered and free market extension period, and the livestock amount largely exceeded the load of the grassland. At the same time, the quick price increase of the mutton, beef, cashmere and wool brought up many "households with an annual income of 10,000 Yuan" on the grassland, and they possessed wind generators and jeeps. The economic development promoted the local traffic industry, and individual bright businessmen became the local wealthy households in several years. However, the damage of the grassland ecology got more herdsmen into the poor, and the double-polarization became more and more serious.

Entering into the 21st century, the geological exploration department found the coal resources of a hundred million tons, and the exploration plan of the enterprise is being implemented.

Problems: 1) In the economic reform, what functions should the government carry out to ensure the sustainable development of the economy?

2) Is the extension of the income difference positive proportional with the ecological depravation? How do we treat the problem of the poor?

3) How do the local citizens and government share the economic boom? Does the enterprise emphasize the long-term ecological benefits? How do the local citizens cultivate the non-governmental organizations to maintain their economic benefits and protect their own survival environment?

Simple analysis: This case is a real evolvement process of the field, and it comes down to various aspects of the core factors of the sustainable development, such as humanity, ecological environment, economy and technology, and though the technology wasn't put forward in the case, but the large-sized coal mine which would be mined will contain more technologies about clean production. According to different angles, the case can be divided into four sub-cases, i.e. case A, case B, case C and case D. Of course, aiming at the students with different professional backgrounds, we can further divide the sub-case. For the sub-case D, we can introduce some data such as cost, price and tax, and describe the management of the coal enterprises according to the practical situation of the existing coal mine, and we should put forward the evaluated problems or let students give the decision project aiming at management and environmental strategy and other problems.

3. The case teaching should combine with various methods to promote the teaching reform and the effect

The sustainable development faces various challenges which are occurring or will occur in the ideology or the real society, and it requires individuals or organization to adopt decisive actions to maintain the human dignity, i.e. the human dignity is the dignity equally shared by every individual without the differences of nation, country and race.

The education based on the sustainable development must face various challenges, and promote the anticipative actions and form justifiable, equal and harmonious value view. Therefore, the sustainable development education can adopt many methods such as character, arts, argument and experience to achieve the final target.

How can the case teaching method effectively serve for the objective system of the sustainable development education? What innovations should the case teaching method have? That are the topics what we should urgently solve.

As a sort of teaching mode to enlighten students to study the practical problems, emphasize students' intelligent development and ability cultivation, enhance the future-oriented comprehensive quality, the case teaching method can reform the sustainable development education and realize the maximization of the teaching effect with various forms.

3.1 The case of the activity mode

The case is developed by the activity mode, and the activity rules must be definite, and the teacher should be the organizer and the manager to ensure that the activity could inspire students' study motivations. Taking the sub-case D as the example, students can play different roles in the institutions such as coal bidding enterprise, government and green organization according to different occupations, and they are divided into many groups to simulate the real business operation process, and experience different roles' emotions and decisions. In the activity mode learning process, we can understand the meaning of the sustainable development and conclude effective measures.

3.2 The case of the exploring research mode

The sustainable development education should emphasize students' active exploitations and researches including direct experience. Teachers should appoint the research topics for students, organize students to experience the local

environment in the locale, obtain the first hand cases about the environment, humanity and economy through the environmental investigation, and analyze and study these cases.

Aiming at the deficient practice, analysis and comprehensive abilities for college students, the case teaching method can innovate in the close combination of the theory and the practice of the sustainable development education, and support capitals and academies for students' practice, exploitation and researches.

The BELL green demonstration course of the Environment College of Beijing Normal University adopts the teaching method combining with college teaching, professional lectures and speech, and puts forward legislation and policy advices through cultivating the team spirit by many modes. The course design is inclined to the case analysis, expert lecture and group discussion. The group which is composed by the students with different specialties can independently select the research topic in the discussion group appointed by the teachers, and the topic includes "the social responsibility of the industrial and commercial enterprise, the function of the civilian environment-protective team, the constitution of the South-to-North water diversion and the environment public policy", and the teaching methods include case study, lecture and interactive proseminar, and under the organization and the guidance of teachers, various groups will complete their own topics. The exploitation and innovation of the case teaching method in Beijing Normal University could obtain active effect, largely inspire students' participation and cooperation spirits, and the disadvantage is that the summarization and the enhancement of the research results are not enough, and the instruction function to the practice is deficient.

The extension of the BELL course and the similar training teaching items in Inner Mongol colleges are possible, and the trans-subject teaching reform of Beijing Normal University can be referred in the extension process of BELL course.

3.3 *The case of the behavior experience mode*

The sustainable development education should first exert the function in the optimization of the college environment. The colleges and relative research teaching institutions about the sustainable development should encourage students to actively participate in various stages such as the plan, the decision and the implementation of the college environment plant engineering. Students are the first eyewitnesses of the college environment, and they are urgent to change the environment. The interior problems in the colleges are the optimal cases such as the throwaway chopsticks, the food plastic bag and the green environment association.

Teachers should improve the occasion and assist students with potentials and behavior abilities to establish the non-government environment organizations rooting in college environment, college culture and college custom when diffusing the knowledge concept of the sustainable development, and organize case discussions aiming at characters, functions and strategic ideas of the non-profitable organization to deepen the knowledge, confirm the objective, select leading talent and form decisive action. In addition, the case teaching method can also combine many methods such as role playing and observation interview to cultivate the emotion, the attitude, the value view and the living mode of the sustainable development.

References

- Jiang, Dongmei. (2002). *The Environment Education Teaching Method and Its Application*. Beijing: China Environmental Science Press.
- Liu, Cangyan. (2004). Analysis of the Reasons that the Case Teaching Method Cannot be Pushed Favorably. *China Education*. No.6.
- Liu, Yigong. (2003). Socrates and the Case Teaching Method. [Online] Available: <http://www.xkcj.com>.
- Wang, Gaoquan. (2004). The Study and the Practice of the Geographical Case Teaching Method. [Online] Available: <http://www.doule.net>.
- Wangmin. (2002). *The Sustainable Development for Education*. Beijing: China Light Industry Press.

Table 1. The homogeneity of the case teaching method and the sustainable development education

Case teaching method	Sustainable development education
Associate the theory with the practice, take the objective, real and locale cases as the teaching materials to implement the theoretical discussion or form the new theoretical growth point through the discussion	Root in regional or community economy, society and ecology, fully recognize the existing crisis and participate in solving the crisis, integrate the learning experiences into daily individual or occupational living
Students change from passive knowledge accepters to the masters in the classroom, take learning as the principal thing, and the teaching is the assistant	Take the process not the result as the orientation. Emphasize the learning not the teaching, especially emphasize experienced learning and the democracy learning after transformation
Encourage students to freely explore and doubt, cultivate students' independent thinking ability and doubtable and critical spirits	Critical thinking, challenge for the main-stream idea and value view, allow to put forward different value view and new opinions
Emphasize the cultivation of the comprehensive quality, cultivate students' logic reasoning ability, research ability and communication and expression ability	Establish the thinking ability taking the system thinking, communication ability and management factor as the core
Students actively and independently think and research practical questions, enhance students' abilities to analyze and solve problems	Solving problem, increase the confidences to solve the conflicts and challenges in the sustainable development
Promote students to communicate and cooperate, respect and care about others through group discussion	Change only imparting knowledge to obtaining knowledge by teachers and students together, and the cooperation is also a core factor of the sustainable development
The balance of teaching and learning, the balance of objective facts and subjective evaluation, the balance of learners' different opinions and ideas	The balance includes the individual aspects such as the objective and the subjective, the sense and intuition, the material and spirit, and the whole aspects such as the economy and ecology, the present and future, and the individual and society

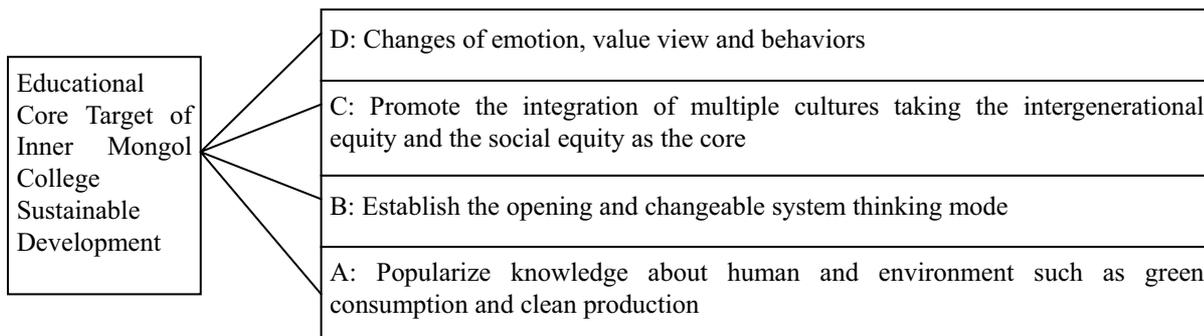


Figure 1. Four Dimensions of the Target of the Sustainable Development Education