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EDUCATION FOR SUSTAINABLE DEVELOPMENT: A SINO-ENGLISH COMPARATIVE STUDY IN ENVIRONMENTAL EDUCATION*

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Abstract: In the People's Republic of China and England, the Government has devoted much attention in recent years to environmental education. The approaches taken in both countries differ, however. The paper looks at some of the similarities and differences that exist and the reasons for them. In particular the paper looks at policy issues as well as practical aspects of environmental education. The idea of Education for Sustainable Development, which is referred to more in England than in China, is critically examined.

Key words: environmental education(EE), China, England, compare, sustainable development
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INTRODUCTION

In China and in England environmental education takes many forms and is implemented by many agencies, both formally and informally. Developments in both countries have been, and continue to be, influenced by government policy, public awareness and subject sub-cultures. This study looks at the development of environmental education both in China and England, picking out some of the key trends, surveys the critical issues in the Chinese experience of environmental education and analyses the English experience of Education for Sustainable Development (ESD).

BACKGROUND

Following World War II, there was a steady growth in the importance of the environment in economic and political affairs. The World Environment and Development Conference (the 'Earth Summit') in Brazil in 1992 focused the world's attention on the issues and exposed some of the dilemmas facing governments.

These international conferences, reflecting world-wide concerns and issues impacted on the existing traditions of environmental education in many countries. In China, for example the State Council issued Chinese Agenda 21 (the State Council, 1994), which emphasised that education is the essential way for the sustainable development, calling on the infusion of environmental education into the whole process of education. While in England, five broad traditions of environmental education have been identified which have contributed to the current situation (HMI, 1990): individual subject teaching, Environmental Studies, Conservation education, Outdoor education, and Urban studies.

A key event in the development of environmental education in England was the Conference on Environmental Education at the University of Keele in 1965. The major focus was on conservation of rural habitats. By the end of the decade the Schools Council had begun to sponsor environmental education projects at primary, secondary and tertiary level. Subsequent reports by Her Majesty's Inspectorate (DES, 1985 and 1989) provided a theoretical framework for the place of environmental education in the curriculum, based on developing practice in schools.

In China, the mark of the official birth of Government sponsored environmental education

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was the conference on environmental education in basic education organised in Beijing in 1979 by the Chinese Association of Environmental Science (CAES). Subsequently, several schools, in a range of cities and provinces, were selected to implement a 3-year pilot project launched by the CAES in 1981, aimed at finding a way to implement environmental education in the existing basic education system (SEPB, 1991).

In 1988, the UK Government introduced a National Curriculum, which led to the creation of five cross-curricular themes: environmental education, health education, careers education and guidance, education for economic and industrial understanding and education for citizenship. The guidance about the teaching of environmental education defined environmental education as three linked components, that is: education about the environment (knowledge), for the environment (values, attitudes, positive action) and in or through the environment (a resource) (NCC 1990).

In 1992, a document issued by China's State Education Commission stated that, 'Environmental education must be paid attention to in such subjects as nature, social studies in primary education, and physics, chemistry, biology, geography, etc. in secondary education.' Since then, environmental education has maintained its formal position within the compulsory education stage.

In England, the Government sponsored Sustainable Development Education Panel (SDEP) report. Its recommended that Education for Sustainable Development (ESD) be incorporated into the aims of the National Curriculum and that schools provide education for sustainable development so that pupils will be competent to practice sustainability at the end of compulsory schooling.

The Qualification and Curriculum Agency (QCA) responsible for the revision of the National Curriculum for England in 2000 'heeded' the advice of the Panel that there is significant mention of education for sustainable development in the DfEE's (Department for Education and Employment) overarching curriculum statement 'Rational for the School Curriculum and Functions of the National Curriculum', and specific mentions in geography, science and design and technology (WWF, 2000).

In Chinese Agenda 21, it was pointed out that 'Educational development is a fundamentally important project towards the sustainable development' and it required educators 'to reinforce the thought of sustainable development', and 'to infuse such contents as resources, ecology, environment and sustainable development into the primary and secondary curriculum' (the State Council, 1994). Hence, after 1992, environmental education in China has been oriented towards sustainability.

Both countries, it seems, are moving towards a focus on education for sustainable development.

THE CURRENT SITUATION

1. Primary Education

At present, environmental education in most Chinese primary schools is integrated into the existing subjects, such as Chinese, mathematics, social studies, nature study, art, and so on (Xu Hui and Zhu Huaixin, 1996). Many primary schools in the UK have built a study of the environment into the curricula through a predominantly topic based approach wherein observation of the local environment and studies of invertebrates are commonly found.

Primary schools in both China and England also implement environmental education through extra-curricular activities. Teachers often guide their students to participate in such activities as tree or flower planting, hiking and mountain climbing, aimed at developing their pupils' initial awareness of protecting and improving the environment through observation and experience.

2. Secondary education

In most Chinese secondary schools, environmental education is infused in subjects such as chemistry, physics, biology, geography, civics, Chinese and social studies. Some secondary schools, at the senior stage in particular, establish an environmentrelated subject (usually an elective course), which is formally listed on the timetable and brought into normal teaching programme. Besides, Chinese secondary schools also pay attention to developing environmental education through extra-curricular activities.

In England, science and geography are the

major curriculum areas in which some study is made of the environment. The emphasis in science has been on environmental studies i.e. ecology whereas in geography the tendency has been more towards a study of the nature of change within environments (often those caused by human activity). There is now considerable overlap between the approaches and materials used by teachers of science and geography.

3. Tertiary education

In England, environmental studies as a subject in post-16 education appears to be less common now than in recent years. This is partly because other subjects are becoming more environmentally biased. Vocational courses do make some attempt to relate the work covered to the environment. At university level, courses with environmental contents appear to be popular and more students than ever are studying some aspects of the environment as part of their degree.

Since the late 1980s, most Chinese higher education institutions have shown concern for the development of environmental awareness in their students. At present, many institutions have infused environmental education into foundation courses instead of setting up a single course on environmental aspects. These institutions pay much attention to related specific environmental problems in the basic courses.

4. Teacher education and training

In China, environmental education has been integrated into the existing subjects so that the students can receive environmental education through their daily learning. On the other hand, the teacher training institutions pay attention to the students' understanding of the relationship between their specialties and environmental education, guiding them to explore the links between the two fields. In order to train the future teachers to be skilful in integrating environmental education in their related subjects, several institutions have begun to set up a course of environmental education which involves the pedagogic principles of environmental education instead of environmental knowledge for those who are working for diplomas or degrees. In order to accelerate this work, since 1997, three centres for environmental education studies, with the support by WWF and British Petroleum Corporation, have been established in Beijing Normal University, East China Normal University and Southwest Normal University.

In England, serious concern has been expressed about the effects of proposed changes to initial teacher-training courses on the provision of environmental education. Moves towards more school-based courses may mean that student teachers may be exposed to less cross-curricular work than before. For many student teachers, the time spent in college during initial teacher education may have a major impact on their attitudes towards environmental education.

SOME FACTORS HINDERING THE PROMOTION OF EE IN CHINA

Generally, there are three specific issues that particularly affect environmental education in China.

1. Historic factors and the exclusion of EE

In 1949, the People's Republic of China was founded. But the new republic faced poverty and backwardness. The whole nation anxiously looked forward to catching up with developed countries, and such slogans as 'combating nature' and 'conquering nature' reflected the national philosophy. The ideal situation that Chinese people longed for was that of 'a forest of chimneys and a sea of dense smoke'.

The main content in the different levels of education was industrial and agricultural scientific knowledge. The 'labour heroes' who had 'conquered' nature were praised. The main thrust of the curriculum through the whole educational system appeared to be anti-nature. As for environmental education, nobody thought of integrating it into the curriculum.

In the 1980s, the Chinese government pursued a more open policy, which made Chinese people recognize again the distance between China and the developed countries. Despite the national policy of environmental protection, a great upsurge in economic construction took place throughout the country. In order to acquire benefits, people seldom consider whether their behaviours are sustainable or not (SEPB, 1991). Such economic models and lifestyles require an education system to impart the knowledge that could foster the economic development, and environmental education, therefore, was excluded

from school education. It is true to say that pursuing economic growth is the main reason that environmental education has not got a stable position in most areas of China.

2. The pursuit of higher education

China has been deeply influenced by Confucianism for nearly 2000 years, and Confucianism still deeply affects the nation's mental state. One important philosophy is that 'a good scholar will make an official'; hence, for centuries, schooling was the ladder towards the upper class. At present, education in China is by no means only for the preparation of officials, but gaining a higher education still results in relatively easy access to a good social position. Since the number of higher education institutions have been limited, only the minority of candidates who graduate from secondary schools, and who do well in the entrance examination, can enter universities and colleges. As a result, the secondary schools are only concerned with the subjects that are included in the college entrance examination and ignore those that are excluded. It is not surprising that teachers care for nothing but the mastery of knowledge and the skills that are useful for dealing with examinations (Zhu Huaixin, 1995).

Because of the influence of the traditional perspective outlined above, environmental education is ignored by school managers and teachers. Recently, however, the Government and educational authorities have been calling for environmental education initiatives. In response, some schools have established such subjects as 'environmental studies,' 'environmental science,' 'ecological studies,' etc. (although they are not environmental education in its broadest sense, they represent major progress). But even such subjects mainly focused on knowledge and skills are often only arranged at Grade One-far from the important examination, and they are usually optional subjects. Some schools have recognised that environmental education is an educational process that should be integrated into various subjects and teaching activities, emphasizing on values teaching, but teachers did not take it seriously, and teaching strategy adopted is still mainly content-based. (Chi-Chung Lam, 1993). The schools and teachers would rather spend time in training their students to be skilful in taking examination instead of exploring ways to integrate environmental education or co-ordinating the contributions that various subjects could make to environmental education (Zhu Huaixin, 1995)

3. The influence of standardised educational administrative management on schools' and teachers' initiatives

For centuries, the Chinese educational administration has mainly been centralised. Even in the 1980s, the curriculum, subjects, syllabuses, teaching materials and even the teaching strategies were determined by the central educational authority. Recently, the State Education Ministry transferred some powers to provincial authorities, but actually, the reforms proposed may still be affected by the 'deeply entrenched verticality' characterising Chinese public administration. (Bradbury and Kirby, 1996).

Such a situation weakens and restricts schools' and teachers' initiatives. Teachers, in order to finish the tasks stipulated by their educational authority, have no time to research the methods of environmental education in the relevant subjects, and have no time to consider how to educate their students for the environment and in the environment.

PROBLEMS WITH THE CONCEPT AND REALISATION OF EDUCATION FOR SUSTAINABLE DEVELOPMENT IN ENGLAND

The UK is the first industrial country in the world, and with the progress of early capitalist economy, the environment was heavily damaged. So early in the Victorian era, teachers and scholars in England started to show concern for the studies of natural world and its living things, maintaining that education should be implemented through outdoor observation (Palmer J. A., 1998). In 1902, the Union of Natural Studies was founded-marking the embryonic form of environmental education, and field study formed the basis of modern environmental education (Sterling, 1992). Since then, together with the influence of the New Education Movement starting at the beginning of the twentieth century, the outdoor approach has become a main way of environmental education. In comparison with the pure infusion of knowledge characterising tradi-

tional education, it is a progress, and is really good for emotional promotion. But the problem is, because of paying too much on 'education for the environment' with the means of 'education in or through the environment', modern environmental education, in some degree, neglects 'education about the environment'. Although the policy of environmental education in the 1990s stressed on the education 'about', 'for' and 'in' environment (NCC, 1990), teachers' understanding of the concept of environment education still lays particular emphasis on experience instead of systematic knowledge. The unbalanced stress on the concept causes difficulties in realizing fully the aims and objectives.

The UK Government sponsored Sustainable Development Education Panel (SDEP) launched its first report in April 1999. The accompanying press release, colourfully headed, 'Green learning for the new century-Government receives think tank blueprint' described the document as 'A visionary programme for education for sustainable development.'

The SDEP report outlines a ten-year programme for schools. Its key recommendation is that all children get education for sustainable development, ensured through National Curriculum requirements, the school inspection framework and initial and in-service teacher training.

The Panel, however, does not see ESD as conceptually problematic. It takes for granted that the purpose for ESD is uncontroversial (SDEP, 1999). The Panel has deliberately chosen not to repeat in any detail the arguments for education for sustainable development. Evidence for this position is not immediately apparent. Cross' survey of teachers (1998), for example, found that, while teachers took the idea of 'sustainable development' at 'face value,' they 'were inhibited by a lack of knowledge of the complexities of the issues and how their teaching might contribute (to sustainable development).'

The Panel sees sustainable development as 'the fundamental challenge that all societies face' (SDEP, 1999). However, it is somewhat naive about 'sustainable development', defining it as something 'which essentially concerns the harmonious interrelationship of the economy, society and the environment' (ibid.). The Panel recognises that this context 'which will be critical to the quality of young people's lives in the immediate and distant future, is largely missing in much current thinking about educational theory and practice' (ibid.) but does not explain why it is missing.

'UK ESD' is clear from the Panel's key principles: Sustainable development is the responsibility of everyone; Education for sustainable development needs to pervade every aspect of life; UK prosperity in the long term depends on our capacity to learn about sustainable development. It would be fair to say that the key principles in the SDEP report act as a programmatic definition of ESD. Programmatic definitions indicate a moral purpose beyond mere prescription of meaning (Scheffler 1960). The moral purpose for ESD is to sustain 'UK prosperity' which means economic rather than any other meaning. The notions that 'sustainable development' is the 'responsibility' of everyone and that it 'needs to pervade every aspect of life' seems to go beyond prescription. The actuality of the importance given to ESD is debatable. Of the three subjects mentioned, only one, Science, is a core subject and, as a result, taught to all students all the way through their schooling.

In the case of ESD, we have a teaching profession which is generally lacking in any appreciation of the theoretical underpinnings of ESD (Cross, 1998), working in schools which have, at least until now, ignored key aspects of environmental education with little access to personal, professional development (Dillon et al., 2000) expected to implement a novel set of ideas that teach children 'the fundamental challenge that all societies face' (SDEP, 1999). Some might question the likelihood that the endeavour will succeed.

For it to succeed in England, ESD needs an implementation strategy built on what we know about educational change. An OECD review of curriculum change in 13 countries showed the rich variety in approaches used to curriculum change (Black and Atkin 1996). In cases where a 'top down' model had been adopted, 'either very little happened at classroom level, or teachers, being disoriented, delivered an impoverished interpretation of the intentions' (Black, 1997). At the other end of the spectrum, in cases where change was put in the hands and minds of the teachers, change was slow. As Black comments: 'Where matters are interlinked

in complex ways and where one has to be sensitive to the local context in which this complex is situated, then only those who have freedom of manoeuvre can then turn a good idea into a really effective innovation.'

CONCLUSIONS

Environmental education is now paid much attention to by various levels of educational authorities and schools in China. With the strengthening of international exchange and the development of Chinese society, some traditional values which are not adaptable to the future needs of society will be weakened. And of course the administrative management will certainly be innovated and improved. Mr Wang Zhan, Vice Minister of the State Education Ministry announced in Nov., 2000 that environmental education would be the priority in the coming curriculum innovation in the basic education, (China Educational Daily, 23 Nov. 2000). In short, environmental education in China has made, and is making great progress, and so the future is bright. We are optimistic that with continuing attention from the Government and with public support, environmental education in China will improve rapidly.

We are not so optimistic about the situation in England. We have argued that, in the light of the English experience, that ESD does not, yet, hold out much hope for education in the 21st Century. Curriculum policy, planning and practice for ESD have shown a lack of intellectual rigour when it comes to conceptualisation of key terms, an almost negligent ignorance of educational research and as a consequence, an impractical and unrealisable implementation strategy.

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