

**Sustainability Education Curricula:  
three case study Masters programmes  
in England and China**

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## ABSTRACT

This study is a critical examination of the theory and practice of sustainability education as interpreted and applied in a sample of Masters courses in England and China. The main intention is to explore what English and Chinese sustainability education Masters courses might learn from each other. The theoretical framework is informed by three curriculum perspectives - socially-critical, liberal-progressive and postmodern perspectives on sustainability education. These perspectives' conceptual differences and implications are explored through three case studies of Masters courses (two in England and one in China), with a focus on their key curriculum characteristics and students' learning experience.

The research findings show that in each of the three courses, aspects of socially-critical, liberal-progressive and postmodern sustainability education coexisted in negotiation with each other. The study contextualises curriculum practices in England and China in terms of institutional, social, political and cultural differences, with particular reference to variations in the dispositions and learning preferences of learners in England and China. The English courses engaged with the three curriculum perspectives in an open and theoretically-informed way, aiming to engender reflective and critical thinking about sustainability education in a range of geographical and professional contexts; whereas the Chinese course engaged with the three perspectives in a narrower, more grounded and practically focused way, aiming mainly to facilitate and disseminate sustainability education curriculum in the context of local schools. The diverse socio-cultural characteristics of the curriculum experiences present in the three courses provide both a rich ground for mutual learning and potential barriers to its achievement. Analysis of contextual issues reveals potential limitations for applying Western sustainability education perspectives and approaches in the context of Chinese higher education. However, the barriers that affect the courses learning from each other are less in the framework of liberal-progressive sustainability education than for socially-critical and postmodern sustainability education.

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## **CHAPTER ONE: INTRODUCTION**

This research is situated in a specific segment of the history of the world. From an international perspective, the world is faced with a plethora of mutually interconnected issues, including environmental problems such as global warming and ecological extinction, social problems such as cross-cultural conflict and the increasing gap between the rich and the poor (Japan Council on the UN Decade of ESD, 2005). Faced with tensions between the environment and society, the World Commission on Environment (WCED) first put the notion of sustainable development (SD) into the limelight at the international level over twenty years ago. It states: ‘sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (WCED, 1987, p.8). It goes on to describe SD as ‘a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are made consistent with future as well as present needs’ (pp.8-9).

Generally speaking, there are increasing numbers of people around the world who are making efforts to contribute to SD from various areas such as science, engineering, economics, politics, philosophy, art and education. In the field of education, there are several widely used educational terms on the theme of SD such as environmental education (EE), development education (DE), education for sustainable development (ESD), education for sustainability (EfS), education for a sustainable future (ESF), Sustainable Education, permaculture education and education for environment, population and sustainable development (EPD). Some of these terms appear to be synonymous and interchangeable, whereas others are argued to be conceptually different. Notably, each of the terms also has multiple definitions and interpretations, as well as theoretical and practical approaches.

As a Chinese citizen interested in global developments in the field of education, I feel challenged not only to identify ways in which education can contribute to resolving the dilemmas that face China but also to see how and to what extent international dialogue and exchange of experiences among educators can help develop an international response to our shared global crisis. To address this issue, I have focused my research on sustainability education curricula in English and Chinese higher education (HE). I

hope I can develop my thinking within and beyond my previous experiences as an environmental activist involved in environmental NGOs and my current educational experiences in English academia, to be open to the various discourses surrounding SD and sustainability education and to learn from them, as a preparation for becoming a sustainability education educator in the future.

In this research study I use the term sustainability education as a generic and inclusive title that can accommodate differing interpretations, but I am aware of the different conceptualisations underpinning different and more specific terms. The aim of the research is to look at how theories, concepts and practices associated with sustainability education are applied in the context of English and Chinese Masters programmes. Broadly, I base my use of the term sustainability education on a definition borrowed from the United Nations Educational, Scientific and Cultural Organisation (UNESCO): 'learning how to make decisions that balance and integrate the long-term future of the economy, the natural environment and the well-being of all communities, near and far, now and in the future' (UNESCO, no date, no page). Sustainability education has experienced divergence and antagonism in its theoretical and methodological approaches and standpoints. Over the last decade, it has drawn on numerous discourses ranging from natural sciences education, conservation education, development education, health education, citizenship education, moral education, peace education, futures education (Van Dam, 2006). Issues of definition and contested meaning in relation to terms used to describe sustainability education are discussed further in the Literature Review.

Regarding the definition of curriculum, I adopt a holistic view of curriculum, which includes not only subject matter content, but also the learning processes and the overall context in which learning occurs (Kelly, 1999; Miller, 2007). Each individual curriculum is characterised by a distinctive relationship between ideas, motivations, plans, policies, principles, theories and practices that, together, constitute the definitive character of a curriculum. In addition, Kelly (1999) has highlighted the distinction between 'the planned curriculum' and 'the received curriculum' (p.5); in other words, the disjuncture that may occur between the intentional curriculum and the curriculum as experienced by the learners. Classroom research has shown that learners are not mere passive recipients of the curriculum but that they bring to the learning experience their own attitudes, dispositions, understandings, preferences and expectations (Pollard, 2005). Any

investigation of curriculum needs to pay attention to the experiences of learners and to the creative role that they play in constructing the curriculum.

This introductory chapter sets the scene for the thesis. I first provide the background of the research. I then introduce the main research question, research sub questions and research design, followed by the justification for the research. Finally, I explain the outline of the thesis chapter by chapter.

## **1.1 Background of the research**

The background of the research is dynamic and complex. A key challenge for this study is to interpret and engage with the different cultural, political and educational contexts present in England and China in ways that are fruitful. In terms of economic globalisation, capitalism is currently a global economic system linking national economies around the world with flows of trade, investment, labour and technology (Wallace, 1990). The imperatives of capital accumulation reflected in global markets, exert a major influence on most societies (Huckle, 1993). Global capitalism's version of production and consumption not only widens the gap between the rich and the poor, but also distances many urban consumers from their natural environments by causing them to rely on consuming resources elsewhere. They see 'the world as a supermarket which always has new products on display' (Touraine, 1992/1995, p.217). Moreover, consumption patterns alienate people from their own inner natures (Plant, 2001). 'Our identity is now less about who we are and more about what we have, with the priority to have more things, different things and better things than others' (Feng, 2009, p.61). The clash between the world's multifarious cultural traditions and the modernity contributed by global capitalism leaves many people unsure of their values and their roles in society (Holmgren, 2002).

China is facing unprecedented environmental and social challenges, given its large population, low per capita resources, fragile ecosystem and uneven regional economic development (Zhang, 2005). The rapid growth of the economy, with the government policy of expanding domestic consumption and its goal of becoming a 'world operational centre', have led to China having a larger and larger ecological footprint, which raises the question of whether China is gaining or losing in the game of economic

development. On the one hand, the hunger to pursue economic growth through the strategy of the market economy has caused a serious decline of social and environmental ethics in China (Wang, 2007). China has overtaken the US as the world's biggest CO<sub>2</sub> emitter. On the other hand, China is the most successful country in history in terms of the speed with which it is eradicating poverty. Currently, China is shifting priorities from sustaining growth at all costs to realising more sustainable growth. In 2005, for the first time, Chinese leaders asked state planners to develop a new indicator to measure the country's growth - 'green GDP' that would account for the costs of environmental impact and resource consumption. But the challenge of how to repair the badly damaged ecosystem and conserve it while maintaining economic growth in such an energy-hungry country is huge. There are even people who predict that green GDP may bring China zero or even negative GDP (Bezlova, 2005).

Like those of other rich countries in the world, patterns of development in England are unsustainable. The Enlightenment inspired Western culture's optimism about science and progress and made people assume that advancing science and technology, by increasing human 'mastery' over nature, would decrease our dependence on it (Dresner, 2002). Industrialisation enabled Western modernity, but at a cost; it was extremely energy intensive and environmentally disruptive. Its social, economic and environmental impact is still reverberating around the world. At an easily visible level, the unsustainable lifestyle ranges from how English people fuel their homes, the food and commodities they consume, to how they get around and how they travel on holidays. If everyone in the world lived a lifestyle at the average rate of British people, we would need three planets to sustain our lifestyles (Sustainable Development Unit, 2006). Ironically, according to Sterling (1996), a more and more convenient and luxurious lifestyle has not made English people happier in general, as social problems become more and more complex such as isolated individualism, cross-cultural conflict and loss of faith in provision from government. Furthermore, England has contributed to making China a 'world operational centre' by importing goods from China. 'Made in China' has become an almost unavoidable hallmark in England. The heavy reliance on importing from China and many other developing countries may have made the air and water cleaner in England, but has triggered and exacerbated environmental problems in exporting countries.

Although governments in both England and China claim to attach great importance to



SD and support relevant programmes in practice, contradictory government signals still exist in both countries and can be regarded as barriers to achieving SD. This is mainly because of the drive to achieve value for money and competitive procurement and the different economic and geographic constraints of local contexts (HEFCE, 2005). The question that underpins this study is in what way education can play a role in addressing these issues? Education has been seen as playing a key role in ‘development’, but how should it reconfigure itself to meet the challenge of achieving ‘sustainable development’?

## **1.2 The research questions and design**

‘Research questions are the door to the research field under study’ (Flick, 1998, p.53). They involve setting the boundaries of the research. They are important in determining the research methodology and helping the researcher stay focused throughout the research (Strauss and Corbin, 1990). My main research question was formed out of a dialectic interaction between the literature and my personal experiences which informed my general research interest. The research questions below allow me to carry out the research with focus and at the same time with flexibility and openness.

The main research question is: what can England and China learn from each other with regard to sustainability education curriculum in HE?

Through analysing the main research question, I designed research sub questions to help probe the main question step by step. Firstly, it is important to understand English and Chinese sustainability education curricula respectively before examining the possibilities for mutual learning between them. Thus, I planned to find out the key curriculum characteristics identified by staff and students, their experiences of and perspectives on their curricula.

Research sub question 1: What are the key characteristics of sustainability education curricula in English and Chinese HE?

Research sub question 2: What are the participants’ experiences of and perspectives on sustainability education curricula in English and Chinese HE?

Then I planned to look across the curricula to examine the differences and similarities between them. The differences between the three curricula may define the areas for

potential mutual learning, whilst the similarities help create the conditions for integration and transfer of ideas and practices.

Research sub question 3: What are the differences and similarities between sustainability education curricula in English and Chinese HE?

I believe that, through addressing the three research sub questions, I will be in a good position to explore the main research question.

It is worth clarifying here that I am looking at sustainability education curricula rather than SD curricula. sustainability education is one of the many aspects of SD. sustainability education curricula are curricula concerning the role of education, in particular, with regard to SD, whereas the SD curriculum can focus on any SD related issues such as conservation, poverty reduction, green architecture, sustainable transport as well as education. Various SD curricula, mainly in science degree programmes, have been established in recent years. But the provision of sustainability education curricula is extremely limited around the world, including in England and China. Additionally, without denying the importance of learning from weaknesses, I chose to focus on exploring positive aspects of the sustainability education curricula in the study, because I consider this as ethically acceptable to the research participants and the identification of the positive aspects serves the purpose of mutual learning between English and Chinese sustainability education curricula.

In terms of the research methodology, I adopted a case study strategy to approach the research questions, utilizing a combination of research methods including document analysis, observation, questionnaires and interviews conducted with both students and staff. Explanations about the research methods and methodology will be addressed in Chapter Three.

### **1.3 The justification of the research**

I justify the main research question from three elements: the significance of HE, sustainability education curricula and cross-national study. Facing environmental crisis, society's requirements for SD is unprecedentedly high. Unfortunately, a big gap exists between people's level of literacy on SD and society's requirements for SD (Shi, 2004).

This gap put an enormous responsibility on educators to face the future honestly and to develop a range of skills and ideas that will help address these issues positively (Collins et al., 1996). How practitioners, theorists and policy makers understand and decide to educate this generation and the next is crucial to our future – a ‘breakdown’ of our ecosystem or a ‘breakthrough’ from unsustainable ‘development’ to SD (Sterling, 1996, p.25). It has been recognised that SD should become an important element in teaching and learning, for instance, SD as a subject and/or SD as a notion integrated into teaching various subjects in schools and higher education institutions (HEIs), but how? There is a big gap between what needs to be done and what can be done. One of the major barriers to building the link is the lack of educators who are able to engage with SD from a policy and a practice level (Shi, 2004; HEFCE, 2005). I argue that developing sustainability education curricula in HEIs may be one way to tackle the barrier for the following reasons.

Firstly, I justify why I chose to focus on the HE sector. HEIs have huge potential to play a significant role in contributing to SD through sustainability education (Wang and Raninger, 2001; Gough and Scott, 2007). As many HEI graduates will move into responsible decision-making positions, it is important that they are able to make judgments and responsible decisions on various sides of SD issues as individuals and as members of society. Furthermore, as Corcoran et al. (2004) point out, HEIs can also benefit from introducing the notion of SD to HE, because sustainability education presents ‘an opportunity to make education more problem based, more interdisciplinary and more applied’ (p.8).

Increasing numbers of HEIs have gradually realised their roles and responsibilities in contributing to SD. The 1990s was a period when HEIs showed their commitments to SD intensively. The *Talloires Declaration* (1990), *Halifax Declaration* (1991), *Swansea Declaration* (1993) and *Copernicus Charter* (1993), which were all participated in by HEIs worldwide, confirmed their roles and responsibilities in education, research, operations, policy formation, networking and outreach in relation to SD. In terms of education, the *Halifax Declaration* encouraged HEIs to ‘enhance the capacity of the university to teach and practise SD principles, to increase environmental literacy, and to enhance the understanding of environmental ethics among faculty, students and the public at large’ (International Association of Universities, 1991, no page). The *Talloires Declaration* stated HEIs worldwide should take action to:

establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to ensure that all university graduates are environmentally literate and have the awareness and understanding to be ecologically responsible citizens.

(University Leaders for a Sustainable Future, 1994, no page)

Resulting from the *Talloires Declaration*, University Leaders for a Sustainable Future (ULSF) was founded. Today, ULSF functions as an independent virtual organisation to support SD as a critical focus of teaching, research, operations and outreach for HEIs worldwide through publications, research and assessment. In 2000, the Global Higher Education for Sustainability Partnership (GHESP) was formed by UNESCO, focusing on identifying, sharing and disseminating effective strategies, models and good practices in interdisciplinary approaches to teaching and researching SD (GHESP, 2004).

Based on my review of the literature in this field, I have come to the conclusion that there is much more sustainability education research being done in the context of primary and secondary education than in HE. Li (2001) believes that, compared with schools, HE has a more important role in sustainability education, because students tend to form their personal values, worldviews and skills in HE. Although I do not assume HE is more or less important than primary and secondary education with regard to sustainability education, because of the gap in researching sustainability education in HE and because of the significance of HE's role in sustainability education, I have chosen to focus my research in the context of HE.

Secondly, I explain why I chose to undertake research on sustainability education curricula. Some people may challenge the value of establishing sustainability education as an academic discipline in HEIs, mainly because they believe sustainability education is too fluid and broad to be defined as an academic discipline and integrating sustainability education knowledge into existing disciplines is a more appropriate approach. Without disputing the value of integrating sustainability education knowledge into existing disciplines, I see the fluidity and breadth of sustainability education as positive elements supporting my argument. However, it must be recognised that adopting an interdisciplinary approach in the context of HE presents a serious challenge. Take, for example, the academic discipline of Environmental Studies and the identity crisis it has experienced. According to Brennan:

What is special about them [environmental studies degree programmes - LF] is that they are, in essence, multi-framework. There is no framework of ideas that is 'environmental', though there are ecological, physiological, geo-morphological, and chemical perspectives ... As we extend our studies to the impact of human beings on the landscape and life forms, so we have to consider economic, political and sociological perspectives. Ironically, it is the very lack of a single framework of ideas that has led to the querying of the academic status of environmental studies. In other words, the more environmental scientists and geographers try to do justice to the complexity of their subject-matter, the more defensive they have to become about their status in institutions with rigid disciplinary structures.

(Brennan, 1991, p.291)

Stables and Scott (2001) express their frustration in their sustainability education practice: 'our wish to be interdisciplinary is, at least in part, thwarted by the incompatibility of subject discourses' (p.277). Although Brennan questions the current disciplinary structures and associated activities, he makes clear that he is not attacking the existence of specialization within HEIs (Brennan, 1991). He continues:

But if the best minds are drawn only to [single framework disciplines - LF], ... then there is little hope for the future. ... A major priority in higher education, then, is to introduce awareness of the fact that single perspectives yield only limited views of complex problems. ... We can perhaps best break away from modes of thought that draw on only one or two frameworks by providing trans-disciplinary units and degree programmes which encourage multi-framework thinking. ... If we can produce enough graduates to whom such thinking is natural, then there is some chance that a wider range of responses to our environmental problems will be forthcoming.

(ibid, pp.291-293)

Indeed, a more divided academic discipline structure in HEIs is creating more subject boxes that limit learners' and educators' thinking and detach them from the world beyond their disciplines. The problems of unsustainable 'development' are becoming more and more complex, dynamic and uncertain and our way of understanding the structure of academic disciplines needs to be changed accordingly. Interdisciplinary disciplines such as sustainability education need to be encouraged, so that more open, flexible, holistic and creative minds can be developed to face up to complex and uncertain challenges ahead.

Thirdly, I explain why I chose the research to be cross-national, i.e. involving two countries – England and China. Practically, because China is my home and England is where I am studying, it is feasible to locate my research in the two countries. Most importantly, cross-national research may be a useful way of making improvements to

sustainability education curriculum by learning from the experience of others. By looking into foreign systems of education, we can be better fitted to study and to understand our own (Sadler, 1979).

Furthermore, the impact of globalisation has reinforced the importance of cross-national research. As Phillips (1999) affirms, in the globalised world, there is a need for more comparative insights than ever before. Broadfoot (2001) maintains that cross-national educational research 'should be at the heart of trying to make sense of the new role of education and how it may best be achieved in a myriad of diverse contexts linked by their common location in a global society' (p.96). Additionally, it provides the 'possibility of a more systematic and theorised understanding of the nature of the relationship between context and process, structure and action', so that the contemporary global patterns and trends and the nature of international changes can be understood better (ibid, p.98).

There is a desire around the world to learn from other countries' educational policies and practices as means of bringing about improvement (ibid). However, 'while we can learn much from the experience of others, there are very real dangers in the uncritical transfer of policy and practice' (Crossley, 2001, p.45). Some learning has ended up with damage rather than improvement, or improvement for the rich rather than the poor. For instance, in some cases, the World Bank has played a misleading role in introducing educational projects from the West to developing countries. Some cases may be due to a lack of in-depth understanding of the countries' socio-historical contexts, some may be driven by an intention to implement neo-colonialism/neo-imperialism (Hetty and Sébastien, 2006).

The socio-historical contexts of the English and Chinese curriculum are significantly different. It is crucial to attach great importance to contextual issues - being reflexive and ethically sensitive throughout the research process - in order to effectively identify what England and China can learn from each other with what kinds of modifications, and what it might be inappropriate to introduce due to contextual differences.

## 1.4 Outline of the thesis

The main body of the thesis consists of four parts: literature review, methodology of the research, research findings and discussions. In Chapter Two - Literature Review, I intend to identify key debates and issues in the literature related to the research topic and research questions. I begin by explaining my understanding of conducting a literature review, the role of my literature review in the research and the literature sources. I then review literature on the notion of SD, the history of sustainability education and the terminology involved. I move to discuss four key curriculum perspectives – technical, socially-critical, liberal-progressive and postmodern perspectives - and their implications for sustainability education. Amongst the four perspectives, I focus on the last three as the theoretical framework of the research. Finally, I introduce English and Chinese HE, their respective responses to sustainability education and issues of cross-national knowledge exchange.

In Chapter Three – Methodology, I aim to explain how I planned and implemented the research to explore what English and Chinese Masters sustainability education curricula can learn from each other and why I thought it needed be done in this way. I first look at how I understand case study as a research strategy and justify my decision to use a case study approach. I then explicate my interpretivist stand in relation to ontology and epistemology, how the notion of reflexivity applies in the research including a discussion on my positionality. I explain the actual procedure of the data collection including the preparation, sampling and four research methods, followed by the approaches to the data analysis and presentation. Finally, I examine the ethical issues involved in the whole process, the level of trustworthiness and the methodological limitations of the research.

In Chapter Four - Research Findings, I intend to present the research findings in detail - case by case, guided by my first two research sub questions:

- 1) What are the key characteristics of sustainability education curricula in English and Chinese HE?
- 2) What are the participants' experiences of and perspectives on sustainability education curricula in English and Chinese HE?

My presentation of each case is prefaced by an explanation of the way in which the data was analysed and the process through which the findings were sifted from the raw data.

This is followed by a descriptive account of the background of each curriculum, including its history, aims, participants, educational materials, teaching and learning approaches, curriculum structure and content. I then address the key curriculum characteristics both within and beyond the theoretical framework, subtitled ‘key characteristics that reflect socially-critical sustainability education’, ‘key characteristics that reflect liberal-progressive sustainability education’, ‘key characteristics that reflect postmodern sustainability education’ and ‘key characteristics beyond the three perspectives’. Finally, I present stories about students’ learning journeys in a narrative form.

Chapter Five: Discussion – aims at a synthesis of the literature, the data and my own voice. I focus on the third research sub question: ‘what are differences and similarities of sustainability education curricula in English and Chinese HE?’ and the main research question ‘what can England and China learn from each other with regard to sustainability education curricula in HE?’ This chapter is divided into two main parts. In the first part, I look at the differences and similarities in the ways in which the case study courses engaged with the three perspectives on sustainability education that I have identified and analysed - the socially-critical, liberal-progressive and postmodern perspectives. This is discussed in relation to the three courses’ institutional, social and cultural contexts, in order to explore how the contexts may affect the differences and similarities between the courses. In the second part, I compare the three perspectives with one another to identify the potential for constructive dialogues between them, drawing on evidence from the three case studies as well as the literature.

Having provided a general picture of the research topic and the research design in Chapter One, I will identify key debates and issues related to the research in more detail and depth in the next chapter: the Literature Review.



## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Introduction

A literature review is ‘the selection of available documents on the topic, which contain information, ideas, data and evidence written from a particular standpoint to fulfil certain aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed’.

(Hart, 1998, p.13)

Two metaphors from Wellington and Ridley explain very well the relationship between a piece of research and a literature review and the importance of the latter: Wellington (2000) makes clear that a researcher’s job is not just to mould their own brick but to slot it into the wall of existing understanding in the located field. It means that individual research should be located in the context of what has been done before. Ridley (2008) describes individual research as a small piece in a jigsaw puzzle. The readers need to have some ideas about the whole jigsaw puzzle and not simply the shade and shape of one particular piece. The two metaphors both emphasise the necessity of contextualising each piece of research. Furthermore, a literature review plays the role of justifying that there is a space or gap needed to be filled in a wall or in a jigsaw puzzle.

Hart (1998) affirms that the quality of a literature review means ‘appropriate breadth and depth, rigour and consistency, clarity and brevity, and effective analysis and synthesis’ (p.26). It requires systematic coverage of major literature on the topic with a high level of conceptual, analytical and critical thinking, summative and formative evaluation, depth and breadth of discussion (Ridley, 2008). A literature review can thus serve a number of purposes including: providing a historical and contemporary context for research; avoiding duplicating a study already done, or repeating others’ mistakes; assisting with the analysis and interpretation of data (Ridley, 2008); relating ideas, concepts and theories to applications; synthesising and gaining new perspectives (Hart, 1998); developing a conceptual framework for the research; providing a vision of, and justifying the need, significance and originality of the research (Morse, 1994) and acknowledging the previous contributors in the field.

The purpose of this literature review is to try to achieve all the above and, in so doing,

to identify key debates and issues related to the research topic and research questions. I critically review literature from a range of sources, for example, historical documents, academic literature, newspapers, policy documents from HEIs, governments, international agencies and independent researchers. The literature sources were found using search engines, computerised databases, library indexes, opportunistic searching, snowball searching and my personal networking, such as sources suggested by my supervisor, tutors and colleagues.

In addition to a continuous engagement with the literature throughout my research, I systematically reviewed the literature in two specific stages. The first stage was at the beginning of the study when I used the literature to narrow down my research focus, then to generate research questions and to form the research design. In order to achieve these goals, I looked for literature within my general research interest which is sustainability education in HE in England and China. The second stage review was pursued after the fieldwork and initial data analysis, when I found that the first review needed further attention. It was important to return to the literature to make connections between the data and the literature, in other words, to reshape my theoretical framework from a wider range of more appropriate literature.

My experience of the literature review is similar to that of Mason's PhD experience as described by Wellington et al. (2005). At a later stage of the research, having also experienced a mismatch between the data and the literature, Mason went back to the literature. 'Through being curious, open-minded and reflective', she managed to construct a theoretical framework that provided 'the pegs from which to hang [her - LF] analysis' (p.70). Using Ridley's (2008) literature review metaphor, my first stage was to comprehend the general picture of the whole jigsaw puzzle and then to identify a particular space that is important to be filled in the puzzle. Then, after painting the shade of the piece of puzzle through my fieldwork, I cut the shape of the piece through the second stage review, so that it fitted into the whole puzzle.

The main body of this review consists of five sections. To set the scene for and to provide contextualising information about the research topic, I critically review the notion of SD (section 2.2), the history of sustainability education (section 2.3) and the terminology involved (section 2.4). I move to discuss four key curriculum perspectives – technical, socially-critical, liberal-progressive and postmodern perspectives - and their

relevance to sustainability education (section 2.5). Amongst the four perspectives, I focus on the last three as the theoretical framework of the research. Finally, I introduce English and Chinese HE and their respective responses to sustainability education, their differences and similarities (section 2.6) as well as issues involved in learning across national and cultural boundaries (section 2.7).

## **2.2 The notion of SD**

First, I shall critically review the literature on the notion of SD, as it constitutes the content of sustainability education. To discuss the notion of SD systematically and profoundly, a whole thesis would not be enough. Here I shall focus on some key ongoing debates and issues emerging around the notion which I feel are most relevant and influential for my research, followed by the introduction of some key points of progress made in recent years and changes occurring.

As introduced in Chapter One, the World Commission on Environment (WCED) first put the notion of SD into the limelight at the international level over twenty years ago, in order to respond to the highly evident disharmony between the environment, the economy and society. WCED (1987) states in the *Brundtland Report*, ‘sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (p.8). WCED originated the notion with the intention to advocate intergenerational equity and to resolve the conflicts between environmental concerns and development interests through promoting an acknowledgement of interdependency between the two. Since then, the notion has become increasingly visible in academic works and in policy documents from international organisations and government and non-government organisations. However, people around the world still feel it is difficult to capture the conceptual thinking and practical approaches associated with SD. People see SD as challenging, complex, abstract, evolutionary and even problematic (Dresner, 2002).

### **2.2.1 Oxymoron?**

There are several key critiques of the notion of SD. The first is that, as some environmentalists argue, in the current mainstream discourse – the industrial and managerial discourse - the use of the term ‘sustainable’ in conjunction with ‘development’ lacks logical consistency. They believe that ‘development’ implies a

particular type of development, that is economic development which is largely responsible for environmental degradation (Disinger, 1990). Since the *Brundtland Report* (1987), the inclusiveness and richness of the notion of SD has been expanded; however, as the concept has mainly been addressed at an international level, through language that is both general and universalist, this inclusiveness and richness has been gained, to some extent, at the cost of making the notion vague and over-complex; by the same token, it has become 'open enough to give room for intellectual manoeuvre' (Cullingford, 2004, p.17). The term has become 'a victim of verbal dexterity' (ibid, p.18). Like the notion of human rights, the notion of SD has become a cliché - a cliché mainly created through its appropriation by political convenience. In other words, politicians purloin the term to show their 'statesmanlike vision of the future' and to cover up 'the concern with the immediacy of the next election' (ibid, p.17). Cullingford (2004) observes that the notion is becoming less and less powerful and profound for the public due to frequent and clumsy misuse and misinterpretation. Many individuals have even started to become weary and tired of those who insist upon its importance.

Whether the notion is logical or not depends on the understanding of the word 'development'. Development can be divided into material aspects and non-material aspects. Material aspects are mainly about the accessibility of commodities supplied by the economy, technology and of course the natural resources which support the whole process, ranging from exploitation, production to distribution and consumption. Non-material aspects are much more complicated and much less identifiable. They are basically about social development in terms of social inclusion, social harmony, cultural richness, promoting equality and fulfilling human potential. Conceptually, SD takes both material aspects and non-material aspects of development into consideration, to address such interrelated issues as environmental degradation, poverty, inequality and crime.

Emerging from these critiques is the need to clarify the notion of SD while continuing to enrich it, instead of being put off by or giving in to the mainstream industrial and managerial discourse and abandoning the potential value of SD. As Dresner (2002) points out, although there is much confusion and mist at present, with time the meaning will become clearer as people learn a new environmental language. Moreover, Nitin Desai, who introduced the notion of SD to WCED as its Senior Economic Adviser, has suggested that, 'the problem in agreeing on the meaning of SD is not fundamentally

about agreeing upon a precise [terminology and - LF] definition, but about agreeing upon the values that would underlie any such definition' (Dresner, 2002, p.64).

### 2.2.2 Business as usual?

The debates surrounding SD are far beyond simply an issue of its logicity. Having been through an early form of capitalism which was ruthlessly exploitative, is contemporary capitalism able to justify itself and sit comfortably with the notion of SD? The second key critique argues that the Western context in which the notion of SD emerged makes it ideologically partial. For example, the WCED's version of SD is described as 'business as usual', which is 'firmly rooted in the existing Western model of society ... rather than *alternative to it*' (Plant, 2001, p.126). As Spaargaren and Mol (1992) point out, Western governments assume or actually prefer SD to mean a switch of the industrialisation process in a direction 'that takes into account the maintenance of the existing sustenance base', in other words, 'ecological modernisation' or 'greening of capitalism' (p.334). It is promoted typically through the supposed benefits of new technologies and 'green-wash', meaning unjustified and misleading claims regarding environmental practices or the environmental benefits of a product, service or policy (Terra Choice, no date), for instance, recycling. Without disputing the necessity of recycling, it is argued to be too superficial to make any real difference to the ambition of SD. Luke (1997) goes as far as considering recycling as 'the symbolic and substantive means to rationalise resource use and cloak consumerism in the appearance of ecological activism' (p.134). We might also consider the idea of creating energy from nuclear fusion - one of the major ongoing projects expected to be accomplished in the future to save humanity through providing clean and unlimited energy. The clarion call is: no need to worry about the energy crisis and global warming once we get hold of the technology. The extension of human power through the use of fossil fuels, however, has led to immense damage to ecosystems. Even more unlimited energy is not a 'solution' of SD in itself, since it could simply be used to destroy ecosystems on an even larger scale (Feng, 2009).

Critical theorists argue that the fundamental obstacle standing in the way of SD is the global dominance of capitalism which masks its own role in continuing environmental destruction and social inequality by 'ecological modernisation' (Plant, 2001). The proposed solution is to reconstruct the modern social system towards a truly democratic world. Unfortunately, despite constant questioning and challenging from anti-capitalist

thinkers and activists, 'ecological modernisation' thought is still generally mainstream, legitimating modernist scientific, political, economic and cultural responses to the challenge of SD.

A significant issue arising from this critique is that developing the notion of SD is more complex than just a process of building upon existing meanings of the notion, as introduced in the first key critique. It needs a significant degree of profound deconstruction, reconstruction and ethical attention.

### 2.2.3 Intragenerational equity

The third key critique of SD relates to intragenerational equity which means applying equity within current generations of population around the world. Having succeeded in addressing **inter**generational equity, ('development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987, p.8)), WCED's version of SD seems to ignore the more realistic **intra**generational equity by failing to ask the questions of: 'what needs?', 'whose needs?' (Plant, 2001, p.128). 'Is SD supposed to meet the needs for water and land, and economic security, or the needs for air travel and bank deposits?' (Sachs, 1999, p.29). One in four (1.4 billion) people in the developing world live in extreme poverty (World Bank, 2008), and this figure is likely to grow with increasing economic and ecological instability. When the poor are struggling to live, requiring them to take action for future generations is both unrealistic and unethical. The representatives from developing countries in the United Nations Conference on the Human Environment in Stockholm in 1972 brought the issue of poverty to the table. They regarded environmental concern as a luxury for the West, and argued that the environment in developing countries was blighted by poverty (Dresner, 2002). Despite some small scale conflicts between conservation and development having been resolved and the promotion of 'win-win' solutions such as ecotourism, which alludes to responsible travel to natural areas, conserving the environment and improving the well-being of local people (International Ecotourism Society, 1990), the disagreements and debates around priorities and the practicability of SD between the developed and the developing world continue.

This critique from the standpoint of the developing world shows the level of difficulty and contextual limitations of SD at a global scale. Nevertheless, the picture is not simply a clear cut division between the developed countries trying to tackle

intergenerational equity and developing countries being incapable of supporting SD. In fact, the developed countries play a counterproductive role in intragenerational equity. Although on the surface, it seems that the developed countries have largely solved domestic conflicts between conservation and development, it is not ‘problems solved’ *per se*, because the problems are still there, they are just transferred to the developing world. Ever since industrialisation began, the West has been constantly transferring social and environmental problems caused by industrialisation to the developing world, first through colonisation, then through promoting free market policy and practice worldwide, to exploit labour and natural resources abroad. This approach enables the developed countries to retrieve clean air and water successfully, while increasing domestic consumption (Pan, 2009).

There is one serious problem that cannot be transferred – climate change. Climate change contributed by human-generated greenhouse gases is believed to be the single biggest environmental threat facing humanity and is truly global, wherever the gases are produced on the Earth. At the UN Climate Change Conference in Bali in 2007 Tony Juniper - a spokesman for a coalition of environmentalists used a metaphor to describe the situation of climate change: ‘the United States in particular is behaving like passengers in first class in a jumbo jet, thinking a catastrophe in economy class won’t affect them. If we go down, we go down together’ (Juniper, 2007, no page). Increasingly, scientific knowledge and evidence of climate change in recent years have forced governments in the developed world for the first time, to see the rich and the poor are in the same ‘jumbo jet’ and SD needs to be applied across the globe. Unfortunately, among the developed countries and emerging economic powers such as China and India, governments are spending more time disputing which countries should take responsibility for climate change, which countries should sacrifice economic development more to cut the carbon emissions, instead of taking concrete actions to tackle climate change (Mehra, 2007). The failure of the most recent international climate summit held in Copenhagen has further exemplified this problem.

Related to this point are some tough questions that need to be addressed urgently and collectively: how to justify and then promote SD across the globe where environmental, social and political contexts are extremely diverse and complex? Can SD find a common ground? How to adjust SD in theory and in practice to suit global diversity?

#### 2.2.4 Anthropocentrism versus Ecocentrism

The fourth key critique of SD is argued by supporters of the concept of ecocentrism, who look beyond intergenerational and intragenerational equity, to see that equity should be applied to both humans and non-humans. In contrast, the WCED's version of SD reflects the idea of the conservation ethic in the early 20th century, known as 'wise use' - 'the greatest good for the greatest number for the longest time' (Pinchot, 2004, p.17), in other words, maximising the possibilities, effectiveness and efficiency of resource use. This implies human development is the endpoint, with the environment playing the role of serving humans' long term needs and wants – an instrumental, dualistic and anthropocentric way of seeing the relationship between humans and the rest of nature. Supporters of the concept of ecocentrism disagree. They hold a holistic worldview – 'that subject and object, self and other, man [sic - LF] and environment, are ultimately identical' (Berman, 1981, p.71). In other words, there are no boundaries, no hierarchies of species and everything is interrelated; everything should be respected in its own right as part of the whole biotic and non-biotic community. The practical implication of this view suggests that humans should live with minimum impact on and with homage to nature (Devall and Sessions, 1985).

Ecologist Aldo Leopold is seen as the founder of ecocentrism. He discussed the ethics involved in dealing with relationships between humanity, the land, animals and plants in his book *A Sand Country Almanac* (1949). Although ecocentric culture is still evident on a very small scale around the world today, it is largely marginalised. For example, in the West, ecocentrists are disregarded by anthropocentrists as 'dreamers who ignore the realities of economic, political, and social conditions' (Larabee and Versluis, 2008, p.vii). I argue that ecocentrism is extremely relevant today, as it can contribute to tackling one of the main root causes of unsustainability of individuals and societies – self-centredness (Feng, 2009). As Olive et al. affirm (2003), the major cultural error of modern culture is the hyper-individualistic self, since 'we lose our continuing commitment and capacity to participate in and negotiate culture within a fuller range' of possibilities for relationships with nature and are left with a much more limited quality of 'self' or 'being' than we realise (p.237).

The ecocentrists' critique of the anthropocentric understanding of SD moves away from the political side of SD addressed in the previous critiques and brings us to the very philosophical issue of 'being', in other words, to ontology. The issue involved in these



arguments is not only about a need for SD to address and balance ideological diversity, but also a need to reflect on human nature and our place in the natural environment.

### **2.2.5 Complexity and uncertainty**

Having already shown the complexity of the notion of SD, the fifth key critique concerns this complexity and uncertainty – two interwoven characteristics of and challenges to SD. As I have introduced above, the notion of SD brings in multiple dimensions including developed world and developing world dimensions, science and culture dimensions, intergenerational and intragenerational dimensions, human and non-human dimensions. Each dimension adds a layer of complexity to the notion, accompanied by a certain level of uncertainty - a state of having limited knowledge where it is impossible to describe exactly existing states or future outcomes (Hubbard, 2007). ‘The world is uncertain, not just technologically, but in its systems, institutions, ideologies and ideas. ... This is an age that is replete with multiplying and contradictory interpretations of the world; it is a world that is discursively open’ (Barnett, 2007, p.136, p.36).

Advocates of SD encounter an awkward situation: the uncertain and ever-changing world ultimately decreases the directive and predictive power of the future-oriented notion of SD. As Scott and Gough (2007) remark, *SD in the future* cannot be properly understood *now*, as the precise requirements for SD depend on a range of uncertain and unknown social and ecological factors, such as technological innovation, changes of social and political systems, shifts in values and preferences, the progress of climate change and unanticipated natural events.

It is argued that the complexity and uncertainty of SD not only make it difficult for SD advocates to communicate their message, but it also can create a psychological barrier to engagement in thinking about and acting on SD. It is partly because the existing range of discourses is not broad and open enough to engage with the public (Kelly et al., 2008). It is also partly because most people avoid complexity and uncertainty, since they feel ill-equipped to cope (Morris and Martin, 2009). A crucial point arising from this critique is how to develop healthy and helpful attitudes towards the complexity and uncertainty involved in SD.

The five key critiques cover voices from various social, political, cultural, economic,

philosophical and psychological positions and show the contested, multifaceted, complex and uncertain nature of the notion of SD. In relation to my research, they pave the way for me to analyse how English and Chinese educators and learners engage with the notion itself, the issues involved and how their understandings and practices relate to these wider discussions.

### 2.2.6 A way forward?

Despite these critiques, dominant political thought has not faced up to the weaknesses in mainstream understanding of SD represented by the *Brundtland Report*; vested interests continue to maintain existing social arrangements (Huckle, 1993). Nevertheless, I see hope for progression in international understanding of SD in probably the most participative, inclusive, representative and responsive international document ever produced to address SD – the *Earth Charter* (Earth Charter Initiative, 2000b). Although the UN initiated the Earth Charter project, it was carried forward by a global civil society initiative. In 2000, the Earth Charter Commission, an independent international entity, finalised and then launched the *Earth Charter* as a people's Charter. In regard to the above critiques, the Charter makes some progressive responses and addresses some of the issues raised in the discussion above.

Concerning the first key critique pointing out the logical inconsistency of the term SD within mainstream discourse, the *Earth Charter* questions the overemphasis on the importance of economic growth which overshadows human development. It makes clear that economic activities should serve the need of 'human development in an equitable and sustainable manner' (Earth Charter Initiative, 2000a, p.3). In terms of the need to learn a new environmental language raised by Dresner (2002), in order to avoid misuse and misinterpretation of SD, the Charter provides an excellent example of an effort made to expand and enrich the notion of SD. 'The drafting of the Earth Charter involved the most inclusive and participatory process ever associated with the creation of an international declaration.' It is 'a product of a decade-long, worldwide, cross cultural dialogue on common goals and shared values' (Earth Charter Initiative, 2000a, p.1). In addition, it is written in an engaging way, using less overarching language than most international documents.

Responding to the second critique of SD as 'business as usual', the Charter made clear the recognition that 'the dominant patterns of production and consumption are causing

environmental devastation, the depletion of resources, and a massive extinction of species' (p.2). It calls to 'build democratic societies that are just, participatory, sustainable, and peaceful', and to 'adopt patterns of production, consumption, and reproduction that safeguard Earth's regenerative capacities, human rights, and community well-being' (p.1). It requires transparency and accountability in governments, multinational corporations and international financial organisations.

In terms of the third critique that focuses on intragenerational equity, the *Earth Charter* covers both intergenerational and intragenerational equity. It pays critical attention to 'freedom' in the neo-liberal world: 'freedom of action of each generation is qualified by the needs of future generations. ... with increased freedom, knowledge, and power comes increased responsibility to promote the common good' (p.2). It calls 'special attention to the rights of indigenous peoples and minorities' (p.3).

In response to the fourth critique from ecocentrists, the Charter emphasizes, upfront in its principles, the importance of recognising 'that all beings are interdependent and every form of life has value regardless of its worth to human beings', and to 'secure Earth's bounty and beauty' (p.2). Then, it urges that 'we must realise that when basic needs have been met, human development is primarily about being more, not having more', that 'we must decide to live with a sense of universal responsibility, identifying ourselves with the whole Earth community as well as our local communities' (p.2). It further explains: 'the spirit of human solidarity and kinship with all life is strengthened when we live with reverence for the mystery of being, gratitude for the gift of life, and humility regarding the human place in nature' (p.2).

In regards to the fifth critique, the Charter calls on us to search for common ground as well as diverse meanings of SD in our complex and uncertain world. It confirms:

... our cultural diversity is a precious heritage and different cultures will find their own distinctive ways to realise the vision [of SD - LF]. We must deepen and expand the global dialogue that generated the *Earth Charter*, for we have much to learn from the ongoing collaborative search for truth and wisdom.

(ibid, p.2)

Furthermore, the history of developing the Charter offers a good example of dealing with the complexity and tensions between important values, as well as how to treat the use of language cautiously (Newman, 2009). For instance, during the drafting process,

leaders of the Inuit Circumpolar who were consulted objected to the use of the term ‘compassion’ in the original draft of *Principle 15*, which covers attitudes towards animals in hunting and fishing communities. Eventually, it was agreed to move the word ‘compassion’ from *Principle 15* which now reads: ‘treat all living beings with respect and consideration’ to *Principle 2*: ‘care for the community of life with understanding, compassion and love’ (Earth Charter Initiative, 2000a, p.3, p.2). The change turns out to be not only acceptable to the Inuit, but also appreciated by the Buddhists, Hindus and Jains, for the concept of compassion now has a prominent place early in the Charter (Newman, 2009).

Facing the idea of uncertainty, the Charter supports a precautionary approach as the best method of environmental protection against the rhetoric of political convenience. This approach means avoiding ‘the possibility of serious or irreversible environmental harm even when scientific knowledge is incomplete or inconclusive’, and ensuring that ‘decision making addresses the cumulative, long-term, indirect, long distance, and global consequences of human activities’ (Earth Charter Initiative, 2000a, p.1).

Most distinctively different from the majority of international documents, the Charter brings spirituality to the scope of SD: alongside environmental, economic, political and social challenges, it mentions spiritual challenges; alongside the intellectual, artistic and ethical potential of humanity, it also emphasises the spiritual potential of humanity; alongside modern sciences, arts and humanities, it also recognises the importance of using and preserving traditional knowledge and spiritual wisdom; alongside human dignity and bodily health, it values spiritual well-being; alongside moral education, it attaches importance to spiritual education for sustainable living (ibid).

The Achilles Heel of SD guidelines or frameworks including the Earth Charter is that, although they may be useful in helping practitioners, such as teachers, to think through what amounts to the (re)interpretation of their work in light of the notion of SD, probably only the most highly motivated practitioners will endeavour to come to grips with these general guidelines or frameworks (Stables and Scott, 2002). Moreover, it remains a question to what extent the Charter’s quest for ‘common goals and shared values’ is sound and realistic (Earth Charter Initiative, 2000a, p.1). This will be discussed in section 5.5.1.

In general, the Charter shows a sense of respect for 'Earth and life in all its diversity' (ibid, p.2), a sense of interdependence, a sense of responsibility, a sense of urgency and a sense of hope. Arguably, it is the most socially critical and radical international document, mainly in terms of its challenge to consumerism and economic growth. Probably for this reason, it unfortunately failed to attract the United Nations to adopt it at a policy level, despite reference occasionally being made to it (Newman, 2009). Nevertheless, the Charter has been responded to by an increasing number of organisations across governments, civil society and the business sector in both the developed and the developing world, mainly through cooperation, dialogues and educational programmes relevant to SD (Corcoran et al., 2005).

### **2.2.7 Changes occurring**

Two significant changes occurred recently to affect SD policy and practice at global and local level, as well as to affect individuals involved at a personal level. One is the ongoing global economic crisis which began to show its impact in the middle of 2007, and which reveals fundamental weaknesses of the current financial system (Shah, 2009). Hopefully, the crisis will be a wake-up call to make governments reconsider the role of market forces and managerial ingenuity and make radical changes towards SD. Furthermore, there is a possibility that lower production and consumption of material goods will actually stimulate the public to find more sustainable ways to fulfil deeper human needs through non-material means. A popular Chinese saying is: crisis and opportunities co-exist.

Marked by the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report in 2007, another change that mainstream science around the world finally came to agree about is the unequivocal fact of a warming climate system and, with more than 90% certainty, that global warming is generated by humans, i.e. by burning of fossil fuels (IPCC, 2007). IPCC (2007) also point out, 'unmitigated climate change would, in the long term, be likely to exceed the capacity of natural, managed and human systems to adapt' (p.71). An increasing amount of scientific evidence has shown that the need for action towards SD has never been so urgent. For some, it is believed that the point of no return has already been reached (Lovelock, 2006; McKibben, 2007; Stibbe, 2009). George Monbiot, who used to be optimistic about meeting carbon emission targets, suggests that according to the new evidence, we might have left it too late. He continues, 'can we afford not to try? No we can't' (Monbiot, 2008, no page).

Indeed, we cannot afford not to try, but how, and how to try with a positive mindset and a sense of hope? Having considered the key features of SD, I now wish to discuss how the international community engage with SD through education – sustainability education.

### **2.3 Historical review of sustainability education**

Nelson Mandela once said that education is the most powerful weapon that you can use to change the world. How is the role of education in SD understood? Here I draw on the literature to provide a chronological review of the milestones in the history of sustainability education at an international level, looking at how the understandings of sustainability education have changed.

The evolution of sustainability education has incorporated the significant influence of some of the eighteenth and nineteenth-century thinkers, writers and educators, notably Goethe, Rousseau, Humboldt, Haeckel, Froebel, Dewey and Montessori (Palmer, 1998). Nationally and internationally, Scottish Professor John Smyth is recognised as one of the founders of environmental education (EE), which was both one of the first terms used in relation to sustainability education and one that remains in common usage. He combined his deep interest in nature with his belief in the benefits of education, particularly its ability to bring about change in human thinking and actions, which took him onto the international scene. He participated in writing the first internationally accepted definition of EE which was presented at the International Working Meeting on Environmental Education in the School Curriculum convened by the International Union for Conservation of Nature (IUCN) and UNESCO in 1970:

Environmental education is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture, and his [sic - LF] biophysical surroundings.

(IUCN, 1970, no page)

The meeting was the starting point for the EE message being spread around the world. It was followed by regular events engaged with the discussion of EE by international organisations in the 1970s (Palmer, 1998). In 1975, the International Environmental Education Workshop moved EE beyond the previous ‘conservation education’ which aimed at teaching people to care about endangered wildlife. The workshop stimulated people to see EE as an educational process with ethical, economical and political

implications. This revised concept of EE was embodied in the *Belgrade Charter* which states:

The goal of environmental education is: to develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively toward solutions of current problems and prevention of new ones.

(UNESCO-UNEP, 1976, no page)

In 1977, the Intergovernmental Conference on Environmental Education convened by UNESCO and the United Nations Environment Programme (UNEP) in Tbilisi marked the culmination of widespread international efforts to define and implement EE (Wheeler, 1985). The conference clarified the guiding principles of EE in terms that are holistic, encompassing not only the object of study but also the form that learning should take, with an emphasis on critical thinking and problem-solving:

EE should:

- consider the environment in its totality ...;
- be a continuous lifelong process ...;
- be interdisciplinary in its approach ...;
- examine major environmental issues from local, national, regional, and international points of view so that students receive insights into environmental conditions in other geographical areas;
- focus on current and potential environmental situations while taking into account the historical perspective;
- promote the value and necessity of local, national, and international cooperation in the prevention and solution of environmental problems;
- explicitly consider environmental aspects in plans for development and growth;
- enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences;
- relate environmental sensitivity, knowledge, problem-solving skills, and values clarification to every age...;
- help learners discover the symptoms and real causes of environmental problems;
- emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills;
- utilize diverse learning environments and a broad array of educational approaches to teaching, learning about and from the environment with due stress on practical activities and first-hand experience.

(UNESCO-UNEP, 1978, no page)

Environmental issues were prioritized more highly than development issues in EE in the 1970s, reflecting the rapidly growing interest in and concern for the environment in the

West at the time, such as issues of whaling, supersonic transport and toxic waste. (McKeown and Hopkins, 2003). Although thinking about EE had progressed, because of its lack of emphasis on poverty eradication, social justice or inequality, it still did not make sufficient sense to educators in developing countries.

In the 1980s, responding to the issue of poverty and underdevelopment, and acknowledging interdependency between the environment and development, WCED introduced the notion of SD. Accordingly, the focus of EE switched from environmental conservation to balancing economic and social progress with concern for the environment and the stewardship of natural resources (UNESCO, no date, a). In 1987, WCED published the *Brundtland Report* where education was seen as a focal point for changes in human attitudes towards environment and development (Palmer, 1998).

Moving into the 1990s, the debate arising from the *Brundtland Report* led to the United Nations Conference on Environment and Development – the Earth Summit – in Rio de Janeiro in 1992. It was the largest international conference held up to that time, attended by about 120 Heads of government and delegates from over 170 countries. The conference documents - *Rio Declaration* and *Agenda 21* – show the United Nations' attention to education's role, calling for 'reorienting education towards sustainable development' (UN, 1992, no page). Dresner (2002) argues however, that although they intended to produce a brief and inspiring statement of the 'new ethic', they ended up with a 'lengthy and uninspiring piece of diplomatic jargon' (p.41).

Nevertheless, the concern for addressing both environmental and development issues that arose in the 1980s was carried through into the 1990s. The term sustainability education officially emerged from the World Summit on Sustainable Development (WSSD) in 2002 as a more inclusive, humanistic version of EE. Having revealed that the goals laid out in the Earth Summit ten years before were still far from becoming reality, the WSSD in Johannesburg identified a clear need to rethink education, and sustainability education paved the way for this 'rethinking' (UNESCO Bangkok, no date). UNESCO (no date) defines sustainability education as 'learning how to make decisions that balance and integrate the long-term future of the economy, the natural environment and the well-being of all communities, near and far, now and in the future' (no page). According to UNESCO (2004), 'the ultimate goal of sustainability education is to empower people with the perspectives, knowledge and skills for helping them live



in sustainable societies' (no page).

Furthermore, the Summit proposed and later the United Nations declared the decade 2005 – 2014 to be the Decade of Education for Sustainable Development (DESD):

The overall goal of the DESD is to integrate the principles, values, and practices of sustainable development into all aspects of education and learning. This educational effort will encourage changes in behaviour that will create a more sustainable future in terms of environmental integrity, economic viability, and a just society for present and future generations.

(UNESCO, no date, b, no page)

The objectives for the DESD are to:

- facilitate networking, linkages, exchange and interaction among stakeholders in sustainability education;
- foster an increased quality of teaching and learning in sustainability education;
- help countries make progress towards and attain the millennium development goals through sustainability education efforts;
- provide countries with new opportunities to incorporate sustainability education into education reform efforts.

(ibid)

The DESD urges the needs to break down the traditional educational scheme and to promote:

- Interdisciplinary and holistic learning rather than subject-based learning
- Values-based learning
- Critical thinking rather than memorizing
- Multi-method approaches: word, art, drama, debate, etc.
- Participatory decision-making

(ibid)

We can see that many of the themes initially developed in relation to environmental education (EE) have been incorporated into the vision for sustainability education, particularly in terms of the forms of learning it advocates. But these have now been allied to an emphasis on development goals and a clearer focus on the forms of local and international action needed to achieve SD. The DESD can help create a sense of solidarity and enhance sharing and learning from different global perspectives by providing a framework for network building, events and initiatives. Nevertheless, although UNESCO takes the lead on sustainability education at an international level, it

‘is subject to all the pressures and conflicts resulting from having to find an agenda that countries (especially those which are the most powerful) of the world can sign up to’ (Wade, 2008, p.17).

‘To aspire to achieve the goals of the DESD by translating its global objectives into the context of the local communities in which they operate’, the United Nations University (UNU) initiated Regional Centres of Expertise (RCE) which create ‘a network of existing formal, non-formal and informal education organisations, mobilised to deliver sustainability education to local and regional communities’ (UNU, no date, no page). The functions of RCE are to ‘build innovative platforms to share information and experiences, to promote dialogue among regional/local stakeholders through partnerships for sustainable development, ... [and to - LF] promote four major goals of sustainability education in a resource-effective manner’ (ibid). These four goals are to:

- re-orient education towards SD, covering existing programmes/subjects from the point of sustainability education and designing an integrated SD curricula. sustainability education programmes are tailored to address issues and the local context of the community in which they operate;
- increase access to quality education that is most needed in the regional context;
- deliver trainers’ training programmes and to develop methodologies and learning materials for them;
- lead advocacy and awareness raising efforts to raise public awareness about the importance of educators and the essential role of sustainability education in achieving a sustainable future. RCEs promote the long-term goals of sustainability education, such as environmental stewardship, social justice, and improvement of the quality of life.

(ibid)

UNU has successfully facilitated regions around the world to set up RCEs, including four in England and two in China.

Most recently, following the inclusiveness tradition of the *Earth Charter*, the Earth Charter Initiative published the *Earth Charter in Education: philosophy and practice* (2008), with contributions from ‘a vibrant network of educators from all regions of the world ... based on their practical experiences of applying the *Earth Charter* in a diversity of educational settings’ (Earth Charter Initiative, 2008, p.1). It states:

Education is the key to advancing the transition to more sustainable ways of living. Education can accelerate progress towards sustainability by rekindling more caring relationships between humans, and between humans and the natural world, and facilitating the creative exploration of more environmentally and socially responsible

forms of development. For this to happen, it is crucial to foster an education that helps people understand the kinds of fundamental changes needed if sustainable development is to be realised.

(ibid, p.1)

The *Earth Charter in Education* provides guidelines for developing Earth Charter educational programmes, activities and materials. It emphasizes the importance of using educational processes that are flexible, contextualised, interdisciplinary, critical, practical and participative. It suggests that 'education processes, drawing upon the *Earth Charter* for reflection, can help discern ways in which human potential can be realised' (Earth Charter Initiative, 2008, p.5). As Newman argues,

it is easy for learners to find nothing but despair as they learn the situation that the world finds itself in, but the Earth Charter provides a framework that offers hope - a way of responding to a time of exceptional challenge and opportunity. ... This can encourage learners to move beyond isolated economic, political and technological responses, to consideration of the more fundamental ethical, psychological and spiritual responses needed to cope with emerging ecological crises.

(Newman, 2009, p.100)

The *Earth Charter in Education* affirms that sustainability education should help learners to:

- Understand the challenges and critical choices that humanity faces; and, appreciate the interdependence between these challenges and choices;
- Comprehend the meaning of a sustainable way of life and of sustainable development; and, personal development goals, virtues, and character strengths consistent with a sustainable way of living;
- Critically evaluate a given situation and identify action goals for bringing about positive change.

(Earth Charter Initiative, 2008, p.5)

The above major international documents on sustainability education paint a very positive picture of education's role in SD, with some reasonable but overarching guidance for implementing sustainability education. There is, however a general lack of deeper engagement with existing obstacles to SD within education which need to be recognised, faced up to, then tackled before moving on to the more positive aspects. This gap between reality and vision makes the progress of sustainability education slow and superficial, leaving practitioners frustrated (Sauvé, 1999). On the other hand, in academia, the analysis of the relationship between education and SD is more sophisticated and less positive, which I will introduce in the next section.

## 2.4 Different perspectives on sustainability education

From the literature, I have identified four key curriculum perspectives that are active and productive in structuring academic debates in sustainability education. They are technical, socially-critical, liberal-progressive and postmodern perspectives on sustainability education. These perspectives are particularly relevant to the current situation of sustainability education and my research. I use the word ‘perspective’ instead of ‘model’, ‘paradigm’ or ‘theory’, because ‘perspective’ indicates a more open way of understanding curriculum instead of a neat and strictly bounded way. All the four key perspectives were developed in the West, rather than China or elsewhere. Western literature on curriculum and sustainability education is much richer and more thoroughly conceptualised than Chinese literature, probably due to the much longer history of Western academic engagement with sustainability education as well as with curriculum in general. However, as I shall try to show, some aspects of these perspectives have been incorporated into or have parallels in Chinese curriculum thinking.

### 2.4.1 Technical perspective on sustainability education

#### *Origin*

The technical curriculum perspective is one of the dominant approaches to curriculum thinking in the West. It emerged after the Second World War when education in the West began to be seen as an instrument for advancing a modern society through developing science and technology (Kelly, 1989). The key statement of the technical curriculum perspective is Ralph Tyler’s *Basic Principles of Curriculum and Instruction* (1949) which became the most widely cited and probably the most influential curriculum book ever published. Tyler identified ‘four fundamental questions which must be answered in developing any curriculum and plan of instruction’:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organised?
4. How can we determine whether these purposes are being attained?

(Tyler, 1949, p.i)

These questions illustrate an ‘objective’, linear, simple and mechanistic curriculum planning approach based on behaviourist psychology. The technical curriculum starts with clear behavioural statements of learning outcomes or objectives, followed by the

experiences and organisation required to achieve these and, finally, evaluation to see if these objectives have been achieved, primarily by testing (Winter, 2001). This emphasis on planned and measurable outcomes has led some critics to argue that it turns educational institutions into factory-like organisations, with clear production targets and tight controls, processing educated people as products. Subject specialists specify curriculum content and its organisation according to psychological principles, just like determining production modes of operation (Apple, 1990). Teachers are factory operatives, using the production modes to deal with students seen as ‘malleable objects’ (Kelly, 1989, p.62).

Tyler’s technical curriculum perspective is very influential in both England and China (Zeng, 2008). It can be argued that this technical curriculum approach fits well with Western culture in the era of modernity when certainty, scientism, efficiency, effectiveness, competition and enterprise are the priorities. Similarly in China, in pursuit of modernity, these features have also become evident in urban areas where they fit relatively easily with China’s tradition of knowledge-based and examination-oriented education (Lu, 2001).

### ***The technical ESD***

The technical curriculum perspective on sustainability education is currently a dominant approach in some areas of sustainability education (Plant, 2004). The two typical technical sustainability education approaches are to (1) train more environmental scientists and engineers or, (2) simply raise SD awareness through ‘should do’ lists and ‘wise use’ tips, such as recycling, using energy efficient light bulbs and electric vehicles. Unfortunately, learners who are taught by the former approach will be likely to become technology optimists, relying on technological fixes such as waste management (ibid). The latter approach may create seemingly active - but actually passive - attitudes, such as ‘I have done my bit to be responsible for my own consumption’. Although both approaches may have some positive outcomes such as prolonging a few landfill lives through recycling, they only, at best, play a role of slowing down the process of an unsustainable society heading towards eco-social system breakdown (Lousley, 1999). Neither approach contributes to altering unsustainable society’s ‘destiny’, as I have discussed in section 2.2.2 - ‘business as usual’. Technical sustainability education ‘brackets off questions about the structure of society, concentrates instead on questions about the behaviour of individuals within that (apparently fixed) structure’ (Tesh, 1988,

p.161). Huckle (1999) observes that the dominant technical approach has made sustainability education become a 'mere fashion or slogan' (p.43). Furthermore, technical sustainability education denies people's perspectives on alternative ways of promoting SD, 'trapping them in an industrialist mind-set that desensitises them to the ecosocial crisis' (Plant, 2004, p.278).

Examination-oriented education is a significant and, for many educationalists, a negative influence at every level of Chinese education including HE, and has parallels with the technical curriculum perspective. Indeed, the technical curriculum perspective is already influential in Chinese curriculum design and has been the subject of critique within Chinese academia (Yuan and Huang, 2009). For this reason and because of the limitations inherent in the technical curriculum perspective as applied to sustainability education discussed above, it seemed desirable to exclude the technical curriculum perspective from the theoretical and analytical framework of my research. The research focuses on what English and Chinese sustainability education curricula can learn from each other, but the lessons that can be offered by the technical sustainability education perspective are limited.

#### **2.4.2 Socially-critical perspective on ESD**

Having rejected technical sustainability education, I move on to the other three key curriculum perspectives on sustainability education - socially-critical, liberal-progressive and postmodern perspectives on sustainability education. They contribute towards the theoretical framework of my research. Since I intend to be open to various ways of understanding sustainability education, as explained in Chapter One, I give equal attention to all three perspectives. This is what Wellington et al. (2005) call 'an eclectic mode of engaging with theoretical perspectives', which 'entails addressing a number of distinct bodies of theoretical literature with the objective of combining them for the purposes of the research, or of developing them further through their interaction' (p.60).

#### ***Origin***

Socially-critical sustainability education largely originated from the critical curriculum perspective. The critical curriculum perspective arose in the West three decades ago as a reaction against the technical curriculum perspective which promotes reproductive and

mechanistic perspectives on and approaches to education. Critical curriculum theorists argue that education serves as a means of social control by policy-makers concerned with cultural and economic reproduction, through over-prescriptive curricula (Pepper, 1987). In his early work, a key author of the critical curriculum perspective, Michael Apple (1981) argues that ‘the overt and covert knowledge that is taught inexorably moulds students into passive beings who are able and eager to fit into an unequal society’, instead of being able and eager to make sense of and respond to the challenges facing humanity (p.135). Without denying that educators should ask ‘what knowledge is of most worth?’ he highlights the profoundly political nature of educational debate and asks ‘whose knowledge is of most worth?’. Curriculum theories, policies and practices are not technical, but inherently ethical and political (Apple, 1990). Unfortunately, with its focus on targets, tests and tick boxes, the technical curriculum perspective leaves little space for the critical thinking and questioning required by the critical curriculum theorists (Wade, 2008).

Having started to develop the critical curriculum perspective from an examination of the links between education and economic control, Apple realised that the critical curriculum theorists need to resist the tendency to deal only with the economic aspect of the issue and to ‘speak directly to cultural and ideological dynamics that were not totally reducible to economic relations, even though they were clearly influenced by them’ (Apple, 1990, p.x). As Carr and Kemmis (1985) maintain, a definitive feature of critical curriculum thinking is the process of ideology critique, by undertaking historical and social analysis to confront questions about the ideological functions of the curriculum, to reveal how the principles and practices of the contemporary curriculum may operate as ideological mechanisms to legitimate certain irrational and unjust educational outcomes.

In Apple’s later work, he is critical of his previously linear and deterministic understanding of the relationship between education and society and claiming there are spaces and opportunities to challenge dominant discourses (Apple, 1996; Carspecken and Apple, 1991). Recent critical curriculum perspectives acknowledge the reciprocal relationship between education and society, therefore recognising education as problematic when it functions as a means of social control, as well as education’s potential to contribute to creating and communicating alternative ideologies. Critical curriculum theorists’ vision is to disclose and overcome the dominant ideologies of

‘privatization, unconnected individualism, greed and profit’ and ‘to build and rebuild our educational, political and economic relations’ (Apple, 1990, p.xv, p.xiii). Furthermore, Apple (1990) points out that the major way to fulfil education’s potential is to place educational institutions back into the larger and unequal society of which they are a part. ‘Until we take seriously the extent to which education is caught up in the real world of shifting and unequal power relations, we will be living in a world divorced from reality’ (p.viii).

### ***In the Chinese context***

While academics in the West (including England) have been engaged with the critical curriculum perspective, it has not gained ground in Chinese academia. However, it can be argued that there is a Chinese version of the critical curriculum perspective, one that is influenced by Chinese Marxism.

Focusing on class struggle as the central element of all social change, Chinese Marxism is the systematic theory of socialism, of which the dominant feature is public ownership of the means of production, distribution and exchange. Following the political success of Marxism in Russia, the Chinese Communist Party (CCP) led by Mao Zedong applied Marxism and won power in China. In the 1950s and the early 1960s, China borrowed educational theories from the Soviet Union, with a prevailing Marxist approach (Jin and Dan, 2004).

The reason why Marxism took root in China is related to the revolutionary spirit of Marxism. ... Marxist critiques of capitalism and the success of socialist thought in Russia brought hope to some Chinese who sought changes in society. The tension between Marxism and capitalism made Marxism the guideline of the Chinese revolution.

(ibid, p.578)

The CCP’s educational role is explicit. Having assumed political leadership, the CCP employed its version of Marxism to promote the rapid social and economic modernisation of the country. The CCP adopted the role of a teacher whose function is to transform the perception and understanding of the public and lead them towards rational knowledge (Munro, 1998).

In Maoist Marxism, the ideas of democracy and centralism are also intertwined with a theory of knowledge. In the stages of acquiring knowledge, an individual begins with perceptual or empirical knowledge gained through practical experience.



Within the brain the individual then generalises and formulates hypotheses or theories about such concrete data. The resulting rational knowledge is higher or more worthy than perceptual knowledge. Following this, individuals test their theories, observe and, if necessary, revise the theory.

(ibid, p.99)

There are two main ideological contradictions among Chinese Marxists. First, the understandings of individual development are varied. Mao had no interest in the individual, only in classes or groups. After the death of Mao, some Chinese Marxists influenced by the early writings of Marx started to be concerned with individual development (ibid). Nowadays, with the acknowledgment of the interrelatedness of individual and collective benefits, individual development is very much supported in Chinese education, under the precondition that the collective benefit cannot be compromised (Zhao, 2008).

Second, for Mao, transforming the minds of the people can only be achieved by eliminating material desires and private ownership (Munro, 1998). During Mao's era, the masses were educated to be proud of being frugal and selfless, while looking down upon and criticising those attracted to material wealth and self benefit. The major departure from this came after Deng Xiaoping became the president in 1978. Deng and the economic reformers argued that socialist goals could best be attained by reducing central government planning and accepting privatization and market forces. This means taking profit into account in organising and running an enterprise, wide differences in wages, legal protection of contracts between economic entities and toleration of individual entrepreneurs (ibid). Accordingly, material desires and private ownership began to be encouraged for the sake of activating the market. Deng's policy has made China the fastest growing economy in the world and this growth has fuelled a remarkable increase in per capita income and a miraculous decline in poverty (Dollar, 2007). Unfortunately, the rapid growth achieved through the strategy of the market economy has also caused a serious decline of social and environmental ethics in China (Wang, 2007).

Landsberg (2007) investigated Marxist curricula in formal education and observed that it is difficult teaching Marxism in China these days. Marxist curricula were made compulsory in Chinese schools and universities soon after the CCP came to power in 1949 and have been compulsory since. The *Education Law of the People's Republic of China, Article 3* states:

In developing the socialist educational undertakings, the state shall uphold Marxism-Leninism, Mao Zedong Thought and the theories of constructing socialism with Chinese characteristics as directives and comply with the basic principles of the Constitution.

(China National People's Congress, 1995, no page)

The reality is, however, that students in almost any Chinese city can look out of their classroom windows and see how irrelevant Marxism is to their daily lives in an environment full of consumerism, private industries and rising income inequality. The disconnection between reality and the Marxist curriculum has caused the loss of students' interest in learning Marxism by and large (ibid). Nevertheless, during the recent global economic crisis that indicated a failure of capitalism, a sudden increase in the sale of Marx's works showed a recovery of the Chinese public's interest in Marxism (Gu, 2009).

### ***Socially-critical ESD***

In terms of the critical curriculum perspective's relevance to sustainability education, an increasing number of Western (including English but not Chinese) academics engage with this approach, frequently called socially-critical sustainability education. It arose as a reaction against the technical sustainability education developed within the framework of capitalism and the state, which unsurprisingly advocates 'ecological modernisation' and turns a blind eye to the actual fundamental political issues underlying the social system. Socially-critical sustainability education applies a critical thinking approach which resists ready-made description and interpretations, routinized and unresponsive behaviour (Parker, 1997). It recognises the limitations of technological fixes and information-based consciousness-raising and refuses to go with the 'flow' of the dominant version of sustainability education framed by global capitalism. For instance, Annette Gough (1997) compares the famous 'three Rs: reduce, re-use, recycle' introduced by Ryan and Ray (1989, pp.4-5) in *101 Ways to Protect Our Environment* with her socially-critical three Rs: 'refuse, reconstruction, redirection (for society)', claiming that the dominant version of sustainability education 'neglects to look at the broader social issues' and thus, is 'tenuous and grossly ineffective' despite international efforts (Gough, 1997, p.154).

Moreover, socially-critical sustainability education challenges the wider mainstream educational community where the prevailing views of sustainability education are

located. As Milbrath (1992) remarks, we are now educating our children to live in a world that cannot be sustained. Sterling (2001) points out: 'we are educated by and large to compete and consume, rather than to care and conserve' (p.21). Summing up the current relationship between education and unsustainability, Sterling maintains:

Education is both part of the problem and the solution. ... Education is proclaimed at a high level as the key to a more sustainable society, and yet it daily plays a part in reproducing an unsustainable society. If it is to fulfil its potential as an agent of change towards a more sustainable society, sufficient attention must be given to education as the subject of change itself. A society faced with a radical imperative to achieve a socially, economically and ecologically sustainable basis within a historically short time needs to reappraise most aspects of its organisation; education – as the main means of social reproduction – has to be at the centre of this task, both as subject and agent.

(Sterling, 1996, p.18)

Socially-critical educators tend to use the term Education for Sustainability (EfS) in relation to sustainability education (Fien and Maclean, 2000; Huckle, 2004, Parker and Wade, 2008). The preposition 'for' indicates the extrinsic or utilitarian function they attach to the role of education. Education is seen as 'an agent of transformation towards sustainability', and learners need to increase their abilities to transform their visions of a fair and sustainable future into reality (Parker and Wade, 2008, p.16).

Socially-critical sustainability education aims to create a new SD paradigm by facilitating a change from transmissive learning towards transformative learning (Sterling, 2001). Dominant educational discourses facilitate transmissive learning which takes place within pre-established boundaries, focusing on information and leaving basic values unexamined; whereas the transformative learning supported by socially-critical sustainability education involves deep awareness of alternative worldviews (ibid). This deep awareness is raised through the practice of fair and participatory decision-making and collective actions (Fien and Gough, 1996). Socially-critical sustainability education encourages, empowers and enables learners to recognise and face up to 'the role of power relations in the formation of knowledge about the ecosocial crisis' and to engage with 'the political forces that shape their lives' (Plant, 2001, p.164).

Socially-critical sustainability education educators acknowledge the value-laden nature of sustainability education and are open and transparent about their own ideological

dispositions, in order to confront capitalism (Postma, 2002). Some are drawn to eco-socialism (sometimes called a green socialist or red-green) vision of SD, for example, key writers of socially-critical sustainability education – John Huckle, Joy Palmer and John Fien. They rediscover, update and extend Jurgen Habermas and Karl Marx’s ideas about social development to address SD issues. The relevance of eco-socialism lies in its potential to free citizens from the treadmill of capitalist production and consumption and foster diverse green political economies (Huckle, 2008). It focuses on democratising social structures by collective political choice and the assistance of an enabling state (Albert and Hahnel 1991; Huckle, 1993). This requires constraints on market forces and a shift from representative to more deliberative or direct forms of democracy. People would come to act as ecological and global citizens, equally involved in the democratic planning of production to ensure a secure and meaningful livelihood for the current and future generations (Huckle, 2008).

Furthermore, socially-critical sustainability education educators acknowledge the importance of diversity of views and approaches within socially-critical sustainability education and beyond. As Thomas (2005) points out, although socially-critical sustainability education has an overt agenda of political literacy, values education and social change, it is not based on a single preferred construction of SD. It is a process of critical reflection based upon ideological dispositions and patterns of preferred and current practices, leading to collective action to possible forms of social organisation that may allow us to live sustainably with one another and the rest of nature (Huckle, 1999; Fien, 2000). As Fien explicates:

The hallmark of transformative [learning - LF] is her and his ‘inner life’, that commitment to ecological and social justice and transformation, which is sustained not only by moral outrage, but also by the habit of critical reflection upon one’s views and work.

(Fien, 1993, p.98)

Notably, Huckle (1999) urges that to improve the situation, learners need real or simulated involvement with environmentally attentive democracy. Hence, it is crucial that teaching strategies are consistent with these goals (Fien, 1993). Hopefully, the exploration of the kind of social relations that might underlie a sustainable society can lead educators to relate to each other’s ideas in cooperative and constructive ways (Jensen et al., 1997).

### *An example of a socially-critical sustainability education curriculum in HE*

An example of a socially-critical sustainability education curriculum in HE is described in Malcolm Plant's PhD research (2001) focusing on a Masters course in EE at Nottingham Trent University in England. Drawing on his own experience of developing, tutoring and evaluating the course, Plant posed the research question: 'to what extent can I establish a sound theoretical basis for realising socio-cultural and ecological sustainability through a Masters course in environmental education?' (p.248). The course was one of a small number, worldwide, of pioneering sustainability education curricula. Students were educators from schools, colleges, universities, conservation organisations, NGOs, wildlife trusts, field studies centres and community organisations. The principal aim of the course was 'to facilitate the critical practice of environmental educators so that they become empowered to further the social conditions necessary for realising an ecologically and socially sustainable, democratic and just society' (Plant, 2004, p.282). He describes taking a 'scholarly risk' in encouraging students to teach 'against the grain', the aim of the course being to involve the students in a form of emancipatory learning that may have conflicted with dominant educational ideologies (Plant, 2001, p.107). The course began with a focus on the individual student's professional needs and aspirations, and then moved on to community SD issues, followed by global SD issues.

Module 1 Introducing Environmental Education: impediments and possibilities

Module 2: Perspectives on the Environment: differing ideologies and utopias

Module 3: Enquiring into the Environment: what knowledge? for what purposes?

Module 4: Realising the Potential of Environmental Education

Module 5: Environmental Education in Action: exploring local community contexts

Module 6: Review of Professional Progress in Environmental Education

Module 7/8: World Politics and the Global Environment/Educational Implications

Research Dissertation

(Plant, 2004, p.281)

Although the course was implemented through distance education, Plant claims to have created an individualised, reflective and dialectical learning atmosphere:

The 'open' nature of the course texts and the dialectical style of the learning processes stimulated by the course texts are necessary conditions for encouraging students to engage critically with the issues and opportunities presented to them in their own cultural contexts.

(ibid, p.154)

He argues that the sharing of professional issues was a way of democratising SD. In this

way, he tried to 'bring the students to a point where they take their learning into their own hands to enable them to become empowered, not in a context-free abstract philosophical void, but empowerment *within* nature and *within* their community' (ibid, p.250).

Students were encouraged and supported not only to appraise, but also to act on educational processes that have the potential to bring about economic restructuring and social change in the interests of SD. Plant suggests that students' assignments and feedback showed that they became empowered through the course and were willing to explore the ways in which the socially-critical perspective could be applied in their work. It is clear, however, that some students experienced difficulties in their attempts to apply socially-critical sustainability education, the reasons for which will be analysed in the next section ('Pedagogical challenges of socially-critical sustainability education'). Unfortunately, the official university faculty viewed the course as a marginal educational endeavour and stopped running it after Plant retired (Plant, 2001).

### ***Pedagogical challenges of socially-critical ESD***

There are four major challenges in engaging in socially-critical sustainability education in practice. First, its ambition to equip people for collective social action confronts the reality that many educators who receive their education and pre-service training in transmissive ways are ignorant about education's potential to be socially transformative (Saha, 2002). Finding meaningful approaches to breakthrough the assumption of transmissive learning is an ongoing challenge for socially-critical sustainability education (Thomas, 2005).

The second challenge is even trickier. Fien and Gough (1996) observe that some people see socially-critical sustainability education as 'dangerous knowledge' and may react negatively, due to its counter-hegemonic tendency. As Fien (1993) points out, instead of empowering people, socially-critical sustainability education can be intimidating for people because it challenges dominant social and educational paradigms. A student on Plant's MA course experienced tension in her professional work at an international school in Oman where the highly restrictive religious and political environment gave little space for critical thinking. Plant describes:

[The student's - LF] concern not to trespass too far onto delicate political ground was reflected in the difficulties she experienced in proposing ways of progressing

environmental education in her classes, from the dominant model of passive learning to a more active and socially critical approach.

(Plant, 2001, p.178)

Plant acted with sensitivity, refraining from pushing the student into initiating an approach to his teaching that would make her feel uncomfortable in her professional relations with her colleagues. Through interaction with the student, Plant appreciated that ‘caution is needed when inviting students to engage in curriculum reform of a socially critical nature’ (ibid, p.183). Despite some students appearing to be comfortable with socially-critical sustainability education, a student who works in a primary school in Holland expressed his concern:

Whilst I agree with the [socially-critical - LF] emphasis totally and accept that it is necessary to constructive environmental attitudes, it is far from the context of (particularly) primary education, and may be a diversion to educators of a reactionary nature.

(ibid, p.242)

A significant issue arising from this challenge is a question of how to avoid creating tension with oppositions when implementing socially-critical sustainability education, especially in culturally, socially and politically sensitive contexts.

Thirdly, the point above made by the student in Holland about socially-critical sustainability education potentially creating ‘a diversion to educators of a reactionary nature’ is valid, as many environmental groups have been labelled as hostile by authorities (Miller et al., 2008, p.109). In political terms, ‘radical’ is often used to mean ‘extreme’ (Harris, 2001). The challenge for socially-critical sustainability education, as a politically focused and radical curriculum, is to weigh up where to draw the line between being radical and being extreme for both educators and learners.

Last but not least, socially-critical sustainability education’s explicitness of their values and political positions is always problematic, regardless of which approach educators adopt (Thomas, 2005). Bowers (1993; 1995) criticises socially-critical sustainability education advocates on the grounds that they have the same underlying principle that aims to replace market capitalism. Knapp (2001) believes that it tends to be difficult for radical thinkers to cross ideological and political boundaries, which may alienate potential allies. He observes that ‘by being increasingly anti-technology, radical environmentalists shut the door on potential solutions to environmental problems,

leaving only a puritan desire to lower standards of living' (no page). Socially-critical sustainability education educators face the challenge of how to operate from the socially-critical perspective to develop learners' values and attitudes towards SD without being indoctrinatory and exclusive (Fien, 1993).

### **2.4.3 Liberal-progressive perspective on ESD**

Liberal-progressive sustainability education originated from the liberal-progressive curriculum perspective. Both the critical and liberal-progressive curriculum perspectives arose as a reaction against the technocratic and bureaucratic perspectives about and approaches to education in the West. Arising in the eighteenth century, however, the liberal-progressive curriculum perspective formed a distinctively different paradigm (Carr, 1998). While the critical curriculum perspective sees education as a socially transformative rather than socially reproductive agent, the liberal-progressive curriculum perspective sees education as being personal and intrinsically valuable in its own right, instead of as a means or agent for achieving certain goals (Peters, 1966). Inspired by the educational ideals espoused in Rousseau's *Émile* (Rousseau, 1762/1979), the liberal-progressive curriculum perspective focuses on 'rational autonomy and individual freedom' (Carr, 1998, p.327), supporting development of free thinking, responsible and morally mature individuals through personal fulfilment and comprehensive development of the mind, intelligence and imagination (Taylor and Richards, 1985). Liberal-progressive educators attach importance to the discovery and facilitation of learners' intuition from an early age, such as 'intuitive sense of justice' and 'innate child wisdom', throughout and beyond the years of formal education (Ashley, 2005, p.191).

Furthermore, American educator and philosopher John Dewey contributed to liberal-progressive thinking by emphasising the importance of the social contexts of education, urging that education should support personal growth through experience and discovery methods in a social context (Dewey, 1938/1991). He noticed the isolation and artificiality of academic education that imparts concepts to learners - not in the context of experiences, puzzles and felt difficulties - but only in the context of other concepts. This leads to learners' grasp of issues being increasingly notional rather than real (ibid). Accordingly, Dewey promoted bridging the gap between the academic and the practical through experiential learning. Experiential learning is learning that is rooted in doing.



By illuminating experiences it provides direction for judgment as a guide to choice and action (Hutton, 1989). It is about learning by being active and taking part, in contrast with 'lecturing' and 'being taught' (Burnard, 1991, p.217). According to Chickering:

It can contribute to more complex kinds of intellectual development and to more pervasive dimensions of human development required for effective citizenship. It can help students cope with shifting developmental tasks imposed by the life cycle and rapid social change.

(Chickering, 1977, p.86)

In general, liberal-progressive curricula guide and facilitate, rather than instruct individuals to determine their own version of the 'good life' in their social contexts, through expanding and fulfilling their own natural curiosity without restrictions from their teachers' interests and prescriptions (Carr, 1998).

### ***In the Chinese Context***

Liberal-progressive thinking has largely influenced not only the West including England but also China. Dewey stayed two years in China and his Chinese students, such as Hu Shi and Tao Xingzhi, were deeply influenced by him. Tao Xingzhi criticised China's book-centred and exam-focused education as being elitist, alienating, impractical and ineffective. He carried out large scale educational reforms according to Dewey's theories, including adopting the method of experiential learning and the principles of 'school as society' and 'education as life' (Yao, 2002, p.253). Dewey's teaching enriched and, to some extent, liberalized Tao's ideas of national reconstruction. Having studied Dewey and then Marxism, Tao used Dewey's liberal-progressive approach to try to achieve national reconstruction and emancipation of the masses through universal, empowering, student-centred and practical curricula. In late 1926, Tao initiated his most famous experiment – Xiao Zhuang School, which combined rural educational reform and rural reconstruction. His unique approach was to build a model rural normal school to train a new kind of rural schoolteacher who would also be a community leader capable of rural reconstruction. They would, in turn, cultivate a new kind of rural school student, who, instead of becoming alienated from rural life, would be an activist in rural reconstruction both while at school and after graduation.

Tao's changing fortune within China's educational debates graphically illustrates the relationship between curriculum thinking and Chinese politics. In 1946 he was made a national hero jointly recognised by the Chinese Communist Party and the wider circle of

Chinese intellectuals. Yet within five years, the title was removed on account of his so-called 'bourgeois reformism' and affiliation with Dewey. After being suppressed for thirty years in Mao's China, he was re-established in 1981 as a national hero and has been widely acknowledged and influential since (Yao, 2002).

His status as an intellectual national hero in China today is firmly established. In a time of moral and cultural confusion, Tao's approach and vision of education has a great appeal for idealists thirsty for authenticity, goodness and beauty. Chinese education reform since 1990 has been directly influenced by Tao's thinking. The reform supports the transformation from examination-oriented education to 'quality education' and aims to achieve students' all-round development - both body and mind, both individuality and social responsibility. This suggests a revival of liberal-progressive education in China. Unfortunately, it is increasingly difficult to advocate and practise Tao's curriculum perspectives under the pressure of market forces that require vocationally instrumental curricula (Yao, 2002).

### ***Liberal-progressive ESD***

Sustainability education discourses that draw upon the liberal-progressive curriculum perspective can be called liberal-progressive sustainability education. Again, this has been widely discussed by Western including English academics but not Chinese. Liberal-progressive sustainability education emerged as a reaction against governments' normative and instrumental interference in citizens' mentality and behaviour towards SD in public and private life. Predetermining and imposing certain values, according to liberal-progressive sustainability education educators, will preclude the development of free and reflexive thinking, as well as rational and moral autonomy which are crucial to personal development (Postma, 2002). Additionally, it 'can result in temptations [for learners - LF] to take short cuts that result in making rhetorical commitments' (Ashley, 2005, p.187). Inspired by R. S. Peters, Jickling asks:

How do we enable our students to push beyond the bounds of our own best thinking or the conventional wisdom of the day? How do we ensure that they can be exposed to additional alternatives? How can they have the opportunity to consider the philosophical underpinnings of ... so called 'radical groups'? Are they to be denied access to forms of understanding that might throw light on alternatives beyond those presently accepted?

(Jickling, 2003, pp.21-2)

To tackle these issues, liberal-progressive sustainability education educators propose that teachers should remain open, neutral and ‘hands off’, setting no intellectual and practical limitations in sustainability education debates, in order to promote open and critical reasoning, as the way to avoid indoctrination and pre-packaged judgements (Ashley, 2005; Postma, 2002). Scott and Gough explain why:

... freedom of thought and action are required if society’s interests (now and in the future) are to be realised. Ironically, too close a focus on society’s present expectations for the future – based on presently available knowledge – may have the effect of limiting that future, through a failure to encourage students to test or challenge those expectations.

(Scott and Gough, 2007, p.111)

Liberal-progressive educators tend to use the term environmental education (EE) in relation to sustainability education (Jickling and Spork, 1998; Stables and Scott, 2002). Rather than seeing EE as an early version and a part of ESD, as UNESCO does, liberal-progressive sustainability education educators see EE and ESD as ideologically different and they intentionally avoid using the preposition ‘for’ when describing their interpretation of sustainability education. In Jickling’s *Why I Don’t Want My Children to be Educated for Sustainable Development*, he identifies the essential criterion of education as ‘the acquisition of knowledge, understanding, and the ability to think for oneself’ (Jickling, 1994, p.116). He criticizes a statement in WCED’s *Brundtland Report* which suggests that the public must be persuaded, or made to pursue SD partly through education (ibid). Rather than ‘what education might do for sustainable development’ as socially-critical educators would ask, Reid (2002) asks ‘what might sustainable development do for education?’ and what is intrinsically educational about SD (p.78). From a liberal-progressive point of view, education is ‘radically non-instrumental: an end in itself. Education properly conceived embodies and deploys our heuristic intelligence as the fundamental contemporary form of responsible - and that is, ultimately sustainable - human living’ (Foster, 2001, p.164).

With regard to the complexity of SD as discussed in section 2.2, liberal-progressive sustainability education promotes plurality, i.e., the existence of multiple entities, including ontological, epistemological, ideological, theoretical, methodological, meta-methodological, ethical and practical plurality (Mäki, 1997). In terms of academic disciplinary structure, interdisciplinarity is one way to promote plurality. For example, Environmental Studies as an academic discipline which is interdisciplinary is highly

consistent with Dewey's ideas, due to its nature of encouraging multi-framework thinking (see section 1.3). In addition, the liberal-progressive perspective makes clear the distinction between multidisciplinary and interdisciplinarity. In multidisciplinary, learners may have studied, simultaneously or in sequence, more than one area of knowledge, without making any connections between them or generating any cooperation between them. For example, multidisciplinary teams of researchers, which are common nowadays, will carry out their analyses separately, as seen from the perspective of their disciplines. The final result will be a series of reports pasted together, without integrating synthesis (Max-Neef, 2005). In contrast, interdisciplinarity means learners can make links between individual disciplines and generate cooperation between them. Learners exposed to the plurality of SD thinking and their limitations, seize opportunities to disagree, to explore, to reflect and to develop their own perspectives (Stevenson, 1987; Jickling, 2003). Moreover, experiential learning, sometimes called place-based sustainability education, plays an important role in dealing with the complexity of SD (Orr, 1992). It provides 'meaningful learning in nature [and in communities - LF] as a result of direct experience(s) over time in which personal and social knowledge and value systems are created through complex cognitive and affective processes' (Brody, 2005, pp.8-9). No example of liberal-progressive sustainability education curricula in HE is provided here, because other than the courses that have been identified for the case studies, I have not found an example.

### ***Pedagogical challenges of liberal-progressive ESD***

There are three key challenges associated with the implementation of liberal-progressive sustainability education in practice. First, its open, exploratory and experiential process can be extremely time-consuming. Ashley (2005) argues that the openness of liberal-progressive sustainability education better serves the cause of SD than the rush to be committed to one particular approach to sustainability education which may turn out to be wrong. 'What may be needed is time and patience, ... the patience of a long apprenticeship in judgement, ... but sustainability education often works against the background of a rhetoric of time running out' (Ashley, 2005, p.192, p.195). Unfortunately, the environmental crisis such as climate change introduced in section 2.2.7 is real and immediate, time to make a sustainable future happen is running out and a sense of urgency is needed (Knapp, 1999). Huckle (2008) contends that liberal-

progressive sustainability education educators can teach sustainability education 'provided that they embrace the full implications of the indeterminate and contested nature of sustainable development, and develop students' reasoning ability through exposure to real examples of partiality', but liberal-progressive sustainability education is unrealistic and 'is more likely to fail by omission'. How to balance the urgent need to tackle SD issues with the time and patience required in liberal-progressive sustainability education is a tricky challenge.

Secondly, Postma (2002) sees liberal-progressive sustainability education's experiential learning as problematical, because 'our daily choices and behaviour are continuously driven and regulated by the prevailing economic and social structures in society' (p.52). The dominant consumerist and managerial culture does not provide an open and fair environment in which learners explore their personal understandings of SD in a free way. The powerful can easily co-opt the ecosocial message and turn it to their advantage (Huckle, 1986). The important issue that needs to be taken into consideration by liberal-progressive sustainability education educators is that liberal-progressive sustainability education promotes a neutral way of teaching, but if the environment where learners acquire their experiences is not neutral, how do the educators deal with it?

Thirdly, Payne argues that there is a danger of liberal-progressive sustainability education promoting solipsism:

maximising 'my' freedom and autonomy and leaving 'you' to yours amounts to little more than the loneliness of being for myself, a solipsism that is a self-defeating view of moral, social and ecological agency for those who take seriously the reconstructive 'nature' of the human condition.

(Payne, 1999, p.8)

In theory, Løvlie and Standish (2002, p.331) make it clear that '[self - LF] understanding cannot be pursued in the isolation of a self-reflective intelligence but depends on the enquiries and actions in which others have expressed their understanding of the human condition'. In practice however, too much demand for learners' autonomy can still lead to solipsism: ignoring self contingency and finitude, as well as the views of others (Allen, 1982). The challenge for liberal-progressive sustainability education advocates is to weigh up the balance between self-fulfilment and reaching out to others.

#### 2.4.4 Postmodern perspectives on sustainability education

##### *Origin*

Postmodern sustainability education originated from postmodernism that has been a major influence among Western (including English) intellectuals and academics since the mid-twentieth century. Postmodernism emerged alongside the increasing realisation of the problems associated with modernism, including the isolation and marginalisation of certain individuals, groups or cultures caused by power and knowledge hierarchies. Generally speaking, postmodernism is resistant to the certainties, universalities, technical and instrumental rationality of modernism, i.e. universal values, grand narratives, broad explanatory theories and transcendent philosophical truths, true for everyone, everywhere and at all times (Hartley, 1997; Plant, 2001). The postmodern image of a world is 'contingent, hazardous and erratic' (Bauman, 1994, p.143).

In terms of postmodern perspectives on SD, some see modern reason and rationality as 'the primary enemy of sustainable development' and 'wish to renew humanity's spiritual, affective and intuitive capabilities' (Blewitt, 2004, p.5). Additionally, some postmodern perspectives resonate with the discussion on ecocentrism (see section 2.2.4) - an organic and holistic worldview as opposed to a mechanistic, instrumental and dualistic way of seeing the relationship between humans and the rest of nature (Devall and Sessions, 1985). 'Deep ecology' established by Arne Naess in the 1970s, as a major theory regarding ecocentrism, is an example of postmodernism's application to SD (Gare, 1995). It seeks the root of the problem of unsustainable 'development' by developing the capacity to feel and understand the interrelatedness and mutual dependence of everything, i.e. separate parts of the ecosystem (including humans) functioning as a whole, whilst rejecting the idea of humans as authoritarian guardians of non-humans (Devall and Sessions, 1985).

In terms of postmodern perspectives on curriculum, postmodernists argue that there is neither a privileged or neutral position, nor singular, universal and objective knowledge (Hartley, 1997). They challenge the legitimation of knowledge based on technical and administrative reason, purporting that modern education systems are 'caught between ... the administrative reason of the state apparatus and the technical reason promoted by the market and industrialism in general' (Peters and Wain, 2003, p.58). They stress the

indeterminacy and contextual particularity of knowledge - local, personal and tacit knowledge (Hartley, 1997). They stress the need to create space for learning from one another ‘as potentially of equal significance’ (Winter, 1989, pp.56-57). The idea of postmodern curriculum goes a step beyond discovery: ‘learning and understanding are made (not transmitted) as we dialogue with others and reflect on what we and they have said – as we “negotiate passages” between ourselves and others, between ourselves and our texts’ (Doll, 1993, p.156). Notably, the negotiation serves the need to find ways in which to respect, care for and engage with others, i.e. partnership ethics, instead of consensus and coherence. Moreover, postmodernists acknowledge, value, embrace and celebrate complexity and uncertainty with an attitude of humility. Through tempering their faith with doubt and basing their faith on doubt, postmodern educators strive to ‘develop the correct amount of tension between commitment and contingency’ (ibid).

### ***In the Chinese context***

Chinese academics have started to engage with Western discussions on postmodernism, such as the notion of particularity, complexity and mutual learning (Li, 2004; Zheng and Yang, 2006). However, Chinese literature on postmodernism is mostly translations of Western literature, instead of an original engagement at a theoretical level.

Interestingly, it can be argued that an original contribution to postmodern thinking can be found in ancient Chinese literature. The origin of the notion of ‘deep ecology’ mentioned above can be traced back to over 2500 years ago when Lao-Tsu established an ecologically-oriented Chinese traditional philosophy – Daoism in his classic work *Dao de Ching* (Maurer, 1982). Daoism seeks to inspire and instruct practitioners in how to obtain an optimal state of harmonic integration between both material and spiritual realms of existence with lessons derived from nature (Kirkland, 2002). Daoism plays an important role in shaping Chinese culture. Some philosophies in Daoism can help understand how individually and culturally we might become more self-aware and move towards a more holistic and participatory worldview. Although Daoism is less influential for Chinese culture than Confucianism and Buddhism, it has its special place in affecting Chinese people’s attitudes toward nature. Some SD/sustainability education theorists in China and beyond turn to Daoism for inspiration, for example, the Daoist classic texts – ‘nature and man unites as one’ and ‘to have Dao, one must act according to the ways of nature’.

### *Postmodern ESD*

There is relatively less literature regarding postmodern perspectives on sustainability education in the West including England than literature regarding socially-critical and liberal-progressive sustainability education. No Chinese literature has made the connection between postmodernism and sustainability education. As postmodernism, within which poststructuralism is subsumed, is extremely elastic conceptually, I will focus on introducing the thinking of four key postmodernists and their relevance to sustainability education.

#### *Foucault, discourses and power/knowledge*

In contrast to the positivist view of discourses as ‘natural’ products of common sense usage or scientific progress (Strega, 2005), Michel Foucault sees discourses as serving the construction of subjectivity and ‘governmentality’. Lessa (2006) summarizes Foucault’s definition of discourse as ‘systems of thoughts composed of ideas, attitudes, courses of action, beliefs and practices that systematically construct the subjects and the worlds of which they speak’ (p.284). Through analysing the positions of subjects occupied by discourses, Foucault revealed ‘the inseparability of knowledge and power’ (Gare, 1995, p.66). He showed that knowledge is steeped in power relations and that knowledge thus becomes the exercise of power through control and regulation of what can and cannot be said or thought. Modern discourses mask substantive inequality and deny difference. We have almost unconsciously become ‘obedient bodies’ compliant to the hidden motives of the powerful – ‘the illusion of an inner mental life must be continually examined and monitored, confined as it is within images of normality’ (ibid, p.69). Significantly, having argued strongly about the politicization of discourses and power/knowledge, Foucault chose to be neutral about power/knowledge regimes and refused to take a political position on matters of freedom and justice (Peters and Wain, 2003). This has led to criticism of him as incoherent, irresponsible and politically infantile (Taylor, 1985; Hoy, 1986).

Inspired by Foucault, there is an increasing literature on SD/sustainability education applying critical discourse analysis that ‘primarily studies the way social power abuse, dominance and inequality are enacted, reproduced and resisted by text and talk in the social and political context’ (Van Dijk, 2001, p.352), for example the debates on development and SD analysed in section 2.2. In addition, the *Earth Charter*, discussed



in section 2.2, pays great attention to how discourses influence understanding. During the drafting process of the Charter, there was a two-year debate over the terms 'Earth', 'earth' and 'the earth'. Capitalisation is applied in the scientific community when speaking of planets and this usage was supported by representatives of indigenous communities, but opposed by some religious conservatives concerned about pantheism or deifying the planet (Newman, 2009). The decision was eventually made to use the capital letter, because when one speaks or writes of 'the earth', there is a tendency to imagine it as merely a thing that is nothing more than a collection of resources for human use and exploitation (Rockefeller, 2008). Discourses around the word 'earth' illustrate the different social and cultural positions of different groups of people and how discourse becomes an exercise of power.

Gough and Price (2001) have analysed the problematic nature of discourses surrounding mainstream SD and sustainability education, pointing out that since the Earth Summit in Rio in 1991, they have become 'a language of power, global capitalism and government' (p.27). According to Plant:

The moralised language of simple green solutions to the ecosocial crisis (e.g. have you done your bit?) mystifies the causes and agents of environmental degradation, deflects critique and questioning, and deceptively universalises the different positions individuals have in relation to the distribution of resources, risks, responsibilities and decision-making power.

(Plant, 2001, p.244)

Indeed, by educating and monitoring people to follow numerous SD lists and guides, people tend to become 'obedient bodies' and 'confessing animal(s)' as Foucault calls it. Thus, from a postmodern perspective, mainstream sustainability education can be seen as a 'technology of power' or a disciplinary regime employed by governments to regulate and control population.

### *Derrida and deconstruction*

The role of language is central to postmodernists' arguments as a way of seeing 'through' rather than 'with' the modernist perspective (Hawkins, 1991). 'Representations of the world are products, artefacts or effects of particular sets of historical and linguistic practices' (Gough and Price, 2001, p.24). Although both are concerned with the role of language, Jacques Derrida's 'deconstruction' is more controversial than Foucault's thinking about discourses, power and knowledge.

The very meaning and mission of deconstruction is to show that things - texts, institutions, traditions, societies, beliefs, and practices of whatever size and sort you need - do not have definable meanings and determinable missions, that they are always more than any mission would impose, that they exceed the boundaries they currently occupy. What is really going on in things, what is really happening, is always to come.

(Caputo, 1997, p.31)

For Derrida, the meanings of texts are influenced by the context and the interplay of other meanings that are both present and absent (Winter, 2006). Examples among key topics of sustainability education can be found in the changing interpretations of the word 'resource' and 'development' as well as the way in which the term 'underdevelopment' was first introduced. In the age of technology the meaning of 'resource' changed from 'resurrection/resurgence' to 'stock or supply of materials or assets'. 'Understanding global resources as raw material and goods, imports and exports, production and consumption distances us from thinking otherwise - reducing the world to measurable phenomena, to materials or assets' (Winter, 2007b, p.77). The word 'develop' had been used in the past as an intransitive verb, casting 'development' as a process that happens inevitably and naturally. Whereas, 'develop' has now acquired a transitive sense, which implies that 'development' is what one agent does to another, which, typically, give legitimacy to economically more powerful countries interfering in the policies of the poorer countries (Rist, 1997). 'Underdevelopment' not only signifies backwardness and the need for intervention, but has also helped to create the binary of 'developed' – 'underdeveloped/developing' categories of countries. 'Underdevelopment' implies that the 'underdeveloped/developing' countries should follow the 'developed' countries' path of modernisation, while 'othering' alternative courses of action (Winter, 2006). Deconstruction shows us how the existence of textual binaries can be harmful (Derrida, 1967/1978). Binaries usually involve a hierarchy and opposition which 'limit and close down the freedom of the language chains by which the disseminating power of words and meaning occurs' (Winter, 2006, p.220).

While some appreciate the value of deconstruction, others find it problematic. Derrida's claim that 'there is nothing outside the text; there is no pretext that is not already text. ... there is no extratext' (Derrida, 1967/1998, p.158) has received a number of critiques. Among the critiques, Foucault declares that Derrida's deconstruction is:

historically well-determined little pedagogy, which manifests itself here in a very

visible manner. A pedagogy which teaches the student that there is nothing outside the text, but that in it, in its interstices, in its blanks and silences, the reserve of the origin reigns; that it is never necessary to look beyond it, but that here, not in the words of course, but in words as crossings-outs, in their lattice, what is said is 'the meaning of being'. A pedagogy that inversely gives to the voice of the masters that unlimited sovereignty that allows it indefinitely to re-say the text.

(Foucault, 1961/2006, p.573)

Some SD/sustainability education advocates also sense that deconstruction has gone too far, or is at least inadequate as a means of achieving SD (Sterling, 2003; Plant, 2001). According to Sterling (2003), deconstruction, on the one hand, helps us 'be critically aware of and analyse the assumptions, the use of language, and the forms and control of knowledge characterised within the modernist paradigm and legitimated by the powerful and by established institutions in society', but on the other hand, the claim that 'there can be no direction, no truth, and no grounding for action' leaves SD hanging meaninglessly in a vacuum (p.150). Although Richard Rorty, who supports deconstruction, makes it clear that 'to deny the power to "describe" reality is not to deny reality' (Rorty, 1979, p.375) and 'the world is out there, but descriptions of the world are not' (Rorty, 1989, p.5), these arguments do not seem to some sustainability education educators to be helpful. Reason and Bradbury (2001) express their frustration with deconstruction, commenting that at a time of ecological crisis, deconstruction does not help us in the area of 'knowledge in action' (p.6). Indeed, as Gough and Price (2001) put it, 'we know that we must doubt our words, but we must continue to reword the world in order to gain the confidence to act' (p.29).

### *Lyotard and narratives*

Jean-Francois Lyotard's work is concerned with narratives which he considers as functioning as authority, authorizing 'an unbreakable *we*, outside of which there can only be *they*' (Shiva, 1989, p.218). Lyotard claimed that modern civilization is constituted through narratives, in particular metanarratives which are highly problematic.

[Metanarrative is - LF] cosmopolitical, designed to transcend all particular cultural identities to create a universal civic identity. ... It supports the linguistic terrorism which denies a voice to all those who cannot reduce the complexity of their experiences and desires to the language of bureaucracies.

(Gare, 1995, pp.65-6)

While Foucault puts marginalised voices in the spotlight, Lyotard favours small, local,

specific narratives to reveal the gap between the intelligible and the sensible and to illustrate the significance of particularity.

As one of the grand notions which was born and thrives in modern times, SD is unsurprisingly challenged by postmodernism. SD is often proposed as a supreme value and goal of humanity (UNESCO-UNEP, 1988). Gough (1998) suggests that ‘the arrogance of the white, upper middle-class, educated, professional men’ shines through the universal statements of SD. Therefore people should be encouraged to ‘deconstruct these statements for the value they embody and the perspectives they contain’ (p.168). For instance, one of the grand statements is the future orientation - intergenerational equity which has been discussed earlier in section 2.2.3. Despite many seeing it as a powerful and useful statement for sustainability education, Sauv  (1999) observes that Western society has not yet learned to be and to live here and now, while there are other ways to relate to time in the traditional Amerindian, Oriental and African cultures. Such ways focus on the present to achieve a unity and harmony of beings and things here and now (Zeromski, 1997). These cultures are beyond the reach of the modernist framework. People in these cultures may feel irrelevant or distant from the grand notion of SD and prefer not to adopt it, but to explore their own frames of reference (Sauv , 1999).

There are also arguments that the challenge against metanarratives may be counterproductive. As Gare (1995) observes, the ‘loss of overarching perspectives and grand narratives ... are threats to the efforts of environmentalists who are struggling to develop and proselytize a global perspective on environmental destruction’ (p.2). This point will be further discussed in section 5.5.1, when I compare postmodern sustainability education with socially-critical sustainability education.

### *Rorty and pragmatism*

Richard Rorty has examined the works of Dewey, Foucault, Derrida and Lyotard and developed out of them a postmodern pragmatism. Postmodern pragmatism extends and conceptualises Derrida’s concept of the postmodern learner as a *bricoleur* – ‘a collector of bits and pieces of knowledge which serve the learner’s immediate purpose, but which do not belong to a master-plan or a fixed system’ (Atkinson, 2000, p.1). It eclectically borrows from various postmodern perspectives and elsewhere. Rorty (1979) claims that our frame of reference for describing nature derives from other descriptions rather than

from some externally existing world. 'Thus re-describing ourselves and our world is the most important thing we can do – finding "more interesting", "more fruitful" ways of speaking ...' (Bonnett, 2004, p.46). In doing so, Rorty (1982) proposes that people should not be limited by a frame of reference that imposes a special 'problem' to solve, a special 'method' to apply, particular disciplinary standards and a collective self-image such as a 'profession'. Through freely and actively constructing and deconstructing texts, postmodern pragmatism replaces unity and objectivity with 'the most useful' and 'the best fit' in the circumstances, erasing the binary differences between 'the valuable' and 'the factual', between science and humanities (Mao, 2003).

On Rorty's account, at the end of the day we have to realise that we are simply involved in an ongoing process of re-describing ourselves and our situations in ways that are more interesting – for example, by helping us to cope better – than their predecessors. There is no such thing as a true description, only more or less interesting ones. Indeed, the pursuit of truth is no longer regarded as a proper goal of thought, for what does the issue of truth add to our understanding of whether or not something helps us to cope?

(Bonnett, 2004, p.52)

Regarding sustainability education, Bonnett (2004) challenges this entirely free-floating way of explaining and understanding supported by Rorty, arguing that Rorty's view is anthropocentric (see anthropocentrism in section 2.2.4), which may 'turn nature in to a chimera' (p.52).

Since for Rorty, descriptions, vocabularies, are 'optional' - matters of choice and local norms and not validated by any external reality - it would seem to follow that we can be regarded as 'authoring' nature in choosing the descriptions and vocabularies that we use to articulate it. ... Is not a form of mastery again in play here?

(ibid, p.57)

Nevertheless, Stables and Scott (2001) point out that despite Rorty's apparent anthropocentrism, his postmodern pragmatism can be applied to the sustainability education debates and is 'particularly useful in allowing us to understand how we can make real progress in the absence of any epistemological certainty' (p.275).

We must have our regulative ideals (truth, beauty, nature, sustainability), but we are often most effective in acting on them when we abandon attempts at absolute and enduring understanding and do what we can to act on them contingently. ... Given that our thinking is constrained by a problematisation of the old, easy assumptions of possible consensus, and must be done in a context of varied and shifting cultural perceptions and practices, we can make only tentative, short-term and conjectural statements about how to move to a more post-humanist curriculum that might result in greater care for ecology and the environment.

(ibid, pp.274-6)

This view contrasts with the socially-critical perspective which attaches importance to long-term visions (such as an eco-socialist vision). As Gare (1995) has suggested the debate between overarching and non-overarching perspectives is a critical issue for SD, and parallels a similar debate between long-term and short-term strategies.

*An example of an ESD curriculum in HE with postmodern elements*

In the example of a sustainability education curriculum in HE introduced in section 2.5.2, Plant rejected postmodernism's claim that knowledge and meaning are relative to the social and cultural environment and dependent on the knower, i.e. relativism, arguing that this may lead to a loss of a sense of purpose in relation to sustainability education (Plant, 2001). Nevertheless, Plant claims to have incorporated his interpretations of the advantages of postmodernism into his course. He explains:

Whilst it could be argued that the complexity and conflicting viewpoints characterizing environmental ideology are negative and constraining, blurring the students' vision and understanding of the ecosocial crisis, I believe that the ambiguity and decentredness of the concepts are potentially liberating in that they offer the students alternatives to unchanging assumptions. This postmodern stance celebrates difference, contradiction and uncertainty, and is an essential qualification for students' access to the kind of learning offered in the MA in environmental education course through which they can practise argument and contemplate alternatives when exploring the relationship between human social systems and the rest of the biophysical world.

(ibid, p.154)

Responding to the postmodern element of the curriculum, one of the students wrote in her assignment:

Postmodernism helps us to realise that there are not necessarily always right answers; it can encourage us to celebrate diversity. It can also encourage us to recognise that what the individual student brings to the learning process is a vital part of that learning. ... Whilst most of us, however, would wish, despite postmodernism, to continue to search for unity and totality, perhaps our focus should be upon what that searching reveals.

(Plant, 2004, p.287)

Moreover, Plant describes assisting his students in exploring how local ways of knowing can help their environmental work in their own local areas, while considering how 'imported knowledge' might conflict with a more traditional view of the

environment (ibid). For example, one of his students was working as a conservation officer for an NGO. Through studying the course, she claimed to have become critical of her own role in promoting Western conservation approaches and concepts in local communities and tried to explore how local knowledge and local ways of knowing could help with her work (Plant, 2001).

### ***Pedagogical challenges of postmodern perspectives on ESD***

There are three major challenges in engaging in postmodern ways of thinking about sustainability education in practice. First, postmodernism accuses modern culture of overlooking questions of values and politics which are already embedded in supposedly neutral language. Nevertheless, if postmodernism is taken to its extreme – the claim that knowledge and meaning are relative to the social and cultural environment and dependent on the knower, i.e. relativism, it may make learners morally and politically irresponsible, because the situation of extreme multiplicity and heterogeneity resulting from relativism leads to nihilism and anything-goesism (Winter, 2006). According to Spretnak (1999), through thinking along the line of ‘*nothing but* cultural construction in human experience’ (p.5), people may develop an ‘ideology of denial’ (p.69) – denying our fundamental embeddedness in the wider ecosystem. More seriously than denial, relativism may lead people into consumer capitalism’s warm embrace (Cole and Hill, 1995). The challenge for postmodern sustainability education educators is how to avoid the extreme relativism that Derrida warns us against, while encouraging diversity and heterogeneity.

Secondly, postmodernists do not shy away from complexity and uncertainty, but as discussed in section 2.2.5, it is probably more common for humans to favour simplicity over complexity, certainty over uncertainty. If we trace Foucault and Lyotard’s life experiences, they were both former Marxist activists, looking for certainty, but both gave up their faith and position in Marxism later and chose to settle for complexity and uncertainty. Their complicated relationship with complexity and uncertainty raises the question: can it be natural and practical to be at ease with complexity and uncertainty and how challenging is it to encourage learners to see complexity and uncertainty as educationally positive.

Thirdly, one of the potential contributions of postmodern sustainability education perspectives is to create dialogues between discourses, opening up new alternatives and

generating partnership ethics. For example, one of the most evident debates is probably between SD/sustainability education activists and SD/sustainability education academics: activists may see academics as ‘wishy-washy’ and over-theoretical; whereas academics may consider activists as being excessively emotional and simpleminded. Unfortunately, postmodernist writings in general are obscure and abstract, making them very difficult for people outside academia to understand and see as relevant. Thus, to make postmodernists’ language accessible to wider audiences is an urgent challenge.

In summary, technical sustainability education focuses on simplicity, certainty, effective management of learning and measurable outcomes. The main features of socially-critical sustainability education include explicitness of values and political positions, reflective and critical thinking, democratic decision-making, transformative learning and action-orientation. Liberal-progressive sustainability education’s main features include implicitness of values and positions, free and autonomous thinking, plurality and experiential learning. Postmodern sustainability education stresses holistic and relational thinking, a focus on complexity and uncertainty, deconstruction, personal, local and tacit knowledge creation, contingent, tentative, participative and mutual learning. The technical, socially-critical, liberal-progressive and postmodern perspectives have all emerged and evolved within the Western culture, but appear to be conceptually very different from one another. In terms of their influence in China, the technical and liberal-progressive perspectives have had much larger influence on Chinese curriculum thinking than the socially-critical and postmodern perspectives. Having discussed sustainability education in relation to the academic literature regarding the four key curriculum perspectives, I then locate sustainability education in English and Chinese HE respectively.

## **2.5 English and Chinese higher education and ESD**

According to Hartley (1997), ‘curriculum ... is not a given. ... It is always a selection from a culture, a culture which is itself framed socio-historically. ... A curriculum is therefore always set within its socio-historical context. It is contingent upon, not “above”, that context’ (p.43). Thus, curriculum cannot be accomplished without recognition of the social world in which it is embedded (Barnett and Coate, 2004). I have discussed some broad contextual issues surrounding English and Chinese sustainability education in section 1.1. Here I provide a review of the literature on English and Chinese HE and their respective responses to sustainability education, in



order to allow the contextual differences and similarities of English and Chinese sustainability education curricula to emerge.

### **2.5.1 English higher education and ESD**

Gellert summarizes the aim of English HEIs:

The overall aim has not been to educate the student to become a perfect scientist or researcher, but to develop methodological thinking, the ability to tackle new problems in a systematic manner and to adopt personality attributes which are now referred to as ‘transferable skills’. English university curricula are therefore clearly circumscribed and the body of transmitted knowledge is fairly codified.

(Gellert, 2001, p.172)

English HEIs play a leading role in advancing knowledge mainly through research. The statement from the Committee on Higher Education still seems timeless: ‘the search for truth is an essential function of HEIs and the process of education is itself most vital when it partakes of the nature of discovery’ (Committee on Higher Education, 1963, p.7). Teaching and learning are usually carried out in small groups to enable discussions and students’ input. Regular amounts of reading and essay-writing are required (Gellert, 2001).

English HEIs are relatively autonomous, with the power to determine their academic and operational futures: to lead, manage and appoint their own staff, determine their estates strategies and manage their resources as they see fit (Department for Education and Skills, 2003). Academic freedom is respected by English HEIs. Academics resist being told what their curricula entail. They are less likely to respond to exhortation or rhetoric from government, which reflects the notional independence of English HEIs from government (Scott and Gough, 2007).

Blewitt (2004) argues that English HEIs’ autonomy is beneficial in promoting SD/sustainability education, because HEIs can ‘make objective analyses of issues without political intervention’; they also have the prerogative to apply ethical standards and see beyond financial accounts and statistics (p.22). However, when ‘outsiders’ such as government and NGOs are trying to promote SD/sustainability education among English HEIs, a critical sentiment is clearly endorsed among some HEIs. For instance in 2005, the Higher Education Funding Council for England (HEFCE) asked the Higher Education Academy (HEA) to lead efforts to embed sustainability education in English HEIs. In response to its suggestion that promoting SD through the curriculum was a legitimate role for HE, ‘forty-eight per cent of respondents broadly supported this, with

thirteen per cent of the total viewing it as a priority', while twenty-seven per cent of all respondents felt that HEFCE should not be the authority to introduce or enforce this (HEFCE, 2006, p.3). An HEI staff member responded to Scott and Gough's research on this matter:

The fact that the proposals regarding the development of curricula and pedagogy could be put forward with apparently little awareness of how they offend basic principles of academic freedom and institutional legal autonomy is deeply troubling. Not only would the development of 'values, skills and knowledge' be inappropriate and contrived for many academic disciplines, but it is arguable that, in purely intellectual terms, the concept of sustainability is still essentially contestable. Perhaps the most fitting role for universities is to provide space for debate about the concept of sustainability, rather than to implement a strategy and action plan which seems to presume that many of the basic issues surrounding the concept are settled.

(Scott and Gough, 2007, p.111)

Another HEI staff member explains:

It is not the job of universities to promote a particular political orthodoxy; it is their role to educate students to examine critically policies, ideas, concepts and systems, then to make up their own minds. The Funding Council should support that objective, including, from time to time, telling the government that the university curriculum is none of its business.

(ibid, p.110)

English HEIs are in a privileged position to turn their back on interventions, no matter good or bad. However, refusing interventions that are potentially positive to SD/sustainability education may be to lose valuable time to pursue SD/sustainability education.

Concerning SD curricula in English HEIs, they can be traced back to the 1940s, when the main emphases were Rural Studies and Nature Studies. This was followed by Environmental Studies since the 1950s and Environmental Science since the 1960s (Alabaster and Blair, 1996). In the early 1990s, SD educators began to assert the value and need for 'cross curricular' greening (Department of the Environment, 1993). Currently, the overall coverage of SD curricula in HE is uneven both within and across disciplines (HEFCE, 2005). The Higher Education Academy (HEA) adduced 'four major barriers to the successful embedding of sustainability education into many of the subject disciplines in HE':

- an overcrowded curriculum;
- its perceived irrelevance by academic staff;

- limited staff awareness and expertise;
- limited institutional drive and commitment.

(HEA, 2005, p.5)

In addition, HEFCE (2005) points out that the perceived breadth and complexity of SD issues and associated jargon are seen as ‘fuzzy’ by some institutions. Despite these barriers, an increasing number of SD related academic courses have been established in English HEIs, for example, Masters in sustainable development at the University of London, Masters in applied environmental economics at the University of Kent and Masters in climate change and sustainable development at De Montfort University.

Concerning sustainability education curricula in particular, as in other countries, the provision is very limited. This is based on my research on websites belonging to English universities, searching degree courses with environmental education, sustainability education, SD or sustainability in their course titles. There may be some courses with sustainability education embedded in them but not explicitly referred to in the course titles, which can not be easily identified through internet searching. The University of York delivers an ‘MA (by research) with a focus on sustainability education’. It is designed to help practitioners to embrace sustainability education in formal education and beyond. It provides an opportunity for action research, evaluation or case study of particular schools, initiatives or programmes (University of York, 2008). I discovered three other sustainability education courses in England. One was the MA in EE at Nottingham Trent University which has now closed (see sections 2.5.2 and 2.5.4). Plant’s PhD thesis (2001) and a book chapter (2004) provide insightful details of the course. Two others still in operation will be introduced and analysed in the case studies in Chapter Four. Parker and Wade (2008) published a book called *Journeys around Education for Sustainability* that is mainly about one of my case study courses. It introduces the course background, evolving process and rationale, followed by a collection of coursework and dissertation extracts by students on this course. The book locates the students’ work as its main body, in order to demonstrate that the aim of the course – generating skills and well-informed ‘agents for change’ in sustainability education - has been fulfilled (ibid, p.2). I refer to this literature in the next chapter when presenting the case studies.

### **2.5.2 Chinese higher education and ESD**

Generally speaking, Chinese HEIs have strong administrative and financial connections

with the government. Instead of allowing Chinese HEIs to be autonomous like English HEIs, the Chinese government uses the *Higher Education Law of the People's Republic of China* (1998) to regulate them. The law states that according to Marxism, Mao Zedong's Thought and Deng Xiaoping's Theory, Chinese HE serves the need of socialist modernisation through educating students 'to be builders and successors of the socialist cause with all-round development of morality, intelligence and physique'. 'The task of higher education is to train senior specialized talents with innovative spirit and practical capability, develop science, technology and culture and promote socialist modernisation'. The statement is explicitly instrumental and directive, which reflects the technical curriculum perspective and is common in Chinese policy statements. Like English HEIs, research is also a priority for Chinese HEIs (Yuan and Huang, 2009).

Textbook-based and teacher-centred educational cultures still exist widely in Chinese HEIs, with lectures and examinations as the predominant form of teaching and assessment (ibid). Although curriculum scholars in China have reached a common understanding of the need to construct 'learner-oriented' curricula, the limited quality and quantity of HE staff has been the main obstacle to making substantial differences (Ma, 2008). Many scholars argue that 'the massive expansion of HE enrolments' initiated by the Chinese government since 1999 has not been matched by an institutional capacity to achieve desirable changes in curriculum (Xue et al., 2001, Zhong, 2008). The increase of the enrolment (including both undergraduate and postgraduate programmes) has simply been too rapid to be coped with by Chinese HEIs. Teaching quality has fallen as a result of the high ratio of students to teachers, which limits interaction between students and teachers (Huang, 2002). Compared with the West, Chinese HEIs have less experience in HE development, lower research quality, higher ratio of students to teachers, more limited staff, facilities and financial support (Wang and Liu, 2008).

Concerning Chinese SD curricula, over ten years ago, they would have been equated with the environmental sciences, teaching about the scientific aspects of nature. Recently, educators have seen SD curricula as a more holistic field drawing from both the social and natural sciences (Zhang, 2004). As a whole, although the SD curricula in Chinese HE are beginning to emerge from the margins of educational thought, policy and practice, it is still immature and often slow in responding to new challenges (Shi, 2004). Like England, the Chinese government encourages HEIs to be involved in SD. In

the *China's Agenda 21 – White Paper on China's Population, Environment and Development in the 21<sup>st</sup> Century* (State Council of the People's Republic of China, 1994), the government states that HEIs need to establish SD related postgraduate programmes and 'Environment and Development' units as a part of all HE curricula. Moreover, since 1999, the Chinese government has been encouraging HEIs around the country to establish 'Green Universities' within which SD curricula are a part. More universities are responding to the policy (Wang, 2006a). There is an increasing number of SD related curricula in China, which usually exist as 'add-on' units within degree courses, for instance, 'environment and sustainable development' - an optional unit established at some HEIs including Shanghai Jiaotong University, Tsinghua University and Tianjing University of Technology. Nevertheless, the variety of SD related curricula in China is significantly less than in England. Despite the effort, the provision of SD curricula is fragmented, casual and short in both variety and theoretical foundation (Wang, 2006a). SD curricula require interdisciplinary approaches to teaching. Unfortunately, disciplinarity is still an inviolable fact of Chinese HE. Many SD curricula still take place in subject 'boxes' and fail to make the links between learning and doing (Xu and Zhu, 2003). Quantity and quality of staff and teaching materials also far from meet the demand of SD curricula (Li, 2001). So far, sustainability education teams are formed by geography and biology specialists, whereas few social science specialists have paid attention to the field (Shi, 2004). In comparison, Chinese HEIs seem have fewer advantages than English HEIs to promote the sustainability education curriculum, due to fewer interdisciplinary curriculum structures as well as fewer staff, literature and funding.

Concerning sustainability education curricula in particular, only one university has provided a Masters course on sustainability education which will be introduced as one of the case studies. There are two pieces of literature on this course. A conference paper by Wang et al. (2007) introduces the course in relation to its background, origin, participants, objectives, design, content, characteristics and recommendations. Moreover, a one-page description of the curriculum structure and content is published in 'Sustainability Education Case Studies' by Wang (2006b) as a part of the UN DESD programme (see section 2.3). I refer to this literature in the next chapter when presenting the case study.

In 'Sustainability Education Case Studies' by Wang (2006b), there is also a two-page

description of the curriculum structure and content of an advanced degree sustainability education course in Hong Kong. The course was proposed by Professor Zijian Li in 2004. It consists of three core units which are the theoretical part of the curriculum and six optional units which are the practical part of the curriculum (Wang, 2006b).

Core unit 1: sustainability education: principles and practice

Core unit 2: SD: curriculum research

Core unit 3: Education and SD: society, economy and culture

Optional unit 1: Outdoor education, experiential learning and sustainability education

Optional unit 2: Community environmental education: principles and practice

Optional unit 3: Key issues around sustainability education

Optional unit 4: sustainability education research

Optional unit 5: Local communication

Optional unit 6: Overseas communication

The detailed curriculum structure can be found in Appendix 1. Unfortunately, when I made inquiries about the course I found out that the course had never run.

### **2.5.3 Similarities and differences**

Having discussed the English and Chinese HEIs respectively, I look across the two countries and identify three main similarities of English and Chinese HEIs. (1) They are both playing a 'growing role as servant to the global economy' through 'knowledge and technology transfer' (Blewitt, 2004, p.2; Bai, 1998). (2) Despite growing awareness and practice in interdisciplinary research in both countries, discipline structures in English and Chinese HE curricula are still not conducive to interdisciplinary curricula such as sustainability education curricula (Blewitt, 2004; Xu and Zhu, 2003). (3) The provision of sustainability education curricula is limited in both countries. English HEIs, nevertheless, offer more sustainability education curricula than Chinese HEIs.

One of the biggest differences between English and Chinese HEIs is the level of institutional autonomy. Being dependent financially and legally on the government and explicitly expressing a role of serving society is common in Chinese political culture, but this is contrary to English HEIs' liberal-progressive perspective. The issue is - what kind of relationship between HEIs and government is beneficial to SD?

In terms of learning style, one of the most frequently discussed differences between China and the West (including England) is that Chinese learners tend to prefer a passive and receptive role in class, whereas Western learners tend to be active and participative. Chan (1999) explains that the Chinese educational philosophy and learning style is largely influenced by Confucianism. Confucianism originated around 2500 years ago and is still a major underlying element of Chinese culture today. Confucius' teachings began as lessons in practical ethics or a set of pragmatic rules for daily life derived from the lessons of Chinese history (Hofstede and Bond, 1988). As a whole, Confucianism contains philosophies regarding the role of human beings, including both government and the public, in Chinese society. Confucius proposed that all rulers must govern with benevolence and justice and that people must obey and respect their leaders in return, in order to develop a morally-motivated bureaucracy (Chun, 1991). 'The end of [Confucianist - LF] education is to guide people to pursue moral perfection in realising the life that performs goodness and benevolence' (Jin and Dan, 2004, p.576). Confucianism emphasises the 'value of harmony' including both inner and social harmony and the avoidance of conflict (Kirkbride and Tang, 1992). Influenced by Confucianism, Chinese learners have been brought up to preserve harmony, to conform and to respect the wisdom, knowledge and expertise of teachers and elders (Chan, 1999). Moreover, Chinese collectivist culture is also a reflection of the collectivist moral code advocated by Confucius (Littlewood, 1999). Collectivism is 'a social pattern consisting of closely linked individuals who see themselves as parts of one or more collectives (family, co-workers, nation); are primarily motivated by the norms of, and duties imposed by, those collectives ...' (Triandis, 1995, p.2). Shaped by the collectivistic culture, Chinese learners tend to value modesty as a virtue and avoid standing out as individuals in class (Xiao, 2006). The learning style fits in with the current dominant teaching approach in China which is teacher-centred.

In contrast, the West (including England) reflects an individualistic culture - 'a social pattern that consists of loosely linked individuals who view themselves as independent of collectives; are primarily motivated by their own preferences, needs, rights ...' (Triandis, 1995, p.2). Individualism has been seen in the West as one of the achievements of modernisation, a form of human development through self-fulfilment (Feng, 2009). Shaped by individualism, Western learners tend to be active in class in terms of taking the initiative to express themselves and interacting with teachers and their peers (Xiao, 2006). The learning style fits in with the widely acknowledged

liberal-progressive approach to teaching in the West which is learner-centred with a focus on facilitating learners' reflective and autonomous thinking.

The similarities and differences of English and Chinese HE are shaped by their social and cultural contexts. How these similarities and differences may influence sustainability education curricula in both countries and how to take them into considerations when identifying cross-national learning opportunities are key issues in my study.

## **2.6 Issues of knowledge exchange**

Although the research question - 'what England and China can learn from each other with regard to sustainability education curriculum in HE' - has never been discussed before in the literature, there has been considerable research focusing on possibilities of learning from other countries/cultures in various contexts. For example, Kai has highlighted the role of Chinese scholars returning from periods of study in the USA 'in introducing new courses and new teaching materials, as well as in importing new content for established courses' in China (Kai, 2005, p.233).

Returned scholars paid much attention to how curricula in the US were organised effectively. They were very interested in independent learning, on-campus experiential learning, peer teaching and group learning as found in the US colleges and universities. They advocated abandoning the Soviet Union's specialised teaching model and importing the American education model for undergraduates.

(ibid, pp.229-230)

Newell has discussed the limitations involved in transferring Western models of management education to the Chinese context. She describes the idea of 'best practice' as a form of 'black boxing' of knowledge, 'thereby obscuring the requirement for reinterpreting the knowledge in order that it makes sense in relation to the particular context of application' (Newell, 1999, p.290). She claims that 'while transferring physical technologies across borders is problematic, transferring social technologies is even more complex because social technologies are less codified and even more interdependent with the social context' (ibid, p.287). Part of her argument rests on the distinction between 'explicit knowledge' which 'can be easily expressed in formal, systematic language' and 'tacit knowledge' which 'is rooted in action and involvement in the particular context' (ibid, p.287). Tacit knowledge is much more difficult to codify and therefore to transfer. This is a distinction also recognised by Li-Hua (2007) who



talks about the ‘destabilisation, culture shock and intolerance towards others’ that can result from academics attempting to transplant ‘tried and tested’ models developed in their home culture to another culture (p.88).

Moreover, in a study of management education delivered by Australian universities to Chinese senior managers, Berrell et al. (2001) point to the universalism that informs Western academic thought and which encourages the idea that ‘general principles and shared values can be applied to a variety of circumstances. ...Consequently, Western managers often solicit the “one best approach” to resolving a problem, irrespective of the circumstances’ (p.31). This runs counter to the experience and outlook of Chinese managers who are much more focused on ‘the unique circumstances associated with specific situations’ and are likely to ‘ignore general policies, regulations and principles when dealing with problems inside the work unit’ (ibid, p.30).

In general, learning has flowed mainly from the developed to the developing countries, based on developing countries’ interest in adopting experiences and models of education that are deemed to be successful. Altbach is concerned with the inequalities that exist between HEIs (and broader national education systems) in this globalised educational marketplace and the ways in which these have reinforced developmental inequalities between countries and regions (Altbach, 2004). He argues that, through colonialism, non-Western countries had European models of HE imposed on them and that even those countries that are not directly colonised have adopted the Western academic model. The universalisation of this Western model of HE is one of the pre-conditions for Western HEIs to dominate global academe and for their host nations to benefit from flows in personnel and finance (ibid).

The powerful universities have always dominated the production and distribution of knowledge, while weaker institutions and systems with fewer resources and lower academic standards have tended to follow in their wake. Academic centres provide leadership in all aspects of science and scholarship – such as research and teaching, the organisational patterns and directions of universities, and knowledge dissemination.

(ibid, p.7)

Whilst knowledge sharing seems desirable in principle, there are both barriers to achieving it as well as potential risks and disadvantages, particularly for developing countries. The discussions above all indicate that before learning can take place between societies, explicit account needs to be taken of the barriers to learning across national

and cultural boundaries as well as the ethical issues involved, which is a key challenge of my study.

## **2.7 Conclusion**

In this chapter, I started with a critical engagement with five key debates on the notion of SD from various social, political, cultural, economic, philosophical and psychological positions, followed by some key points of progress made in recent years and changes occurring. Then I provide a chronological review of the milestones in the history of sustainability education at an international level to look at how the understandings of sustainability education have changed. In the main part of the review which forms the theoretical framework of my research, I critically analysed three traditions of thought regarding sustainability education: socially-critical, liberal-progressive and postmodern perspectives on sustainability education including their origins, key arguments and limitations. Lastly, I introduced the contexts of English and Chinese HE, with a focus on their SD and sustainability education curricula, their differences and similarities, as well as issues of knowledge exchange across national and cultural boundaries.

The literature review shows the complexity of the field of sustainability education - its diversity, contradictions, problems, uncertainties, challenges and obstacles. Literature focusing directly on sustainability education curricula is extremely recent and limited, which helped me identify the gaps in the field. Although insufficient, the existing literature on sustainability education curricula in HE assisted me to clarify my research focus and to avoid duplicating previous research. In addition, the review has enhanced my understanding of the research topic, which contributed to the design of questionnaires, interview and observation schedules. Most importantly, I identified my theoretical framework which also serves as the analytical framework. I will explain how I apply the analytical framework to interpret and conceptualise my research data in the next chapter.