

STUDENT ORIENTED EDUCATION FOR CHINA:
A WHITEHEADIAN PROPOSAL

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ABSTRACT

In this thesis I argue in favour of student-oriented education for China based on the educational philosophy of Alfred North Whitehead. Whitehead's educational thought, while Western in origin, has a strong appeal for Chinese educators because of its openness to other cultural traditions.

My own experience as a student and teacher, coupled with a general review of the history of education in China, shows how education is, and has been, exclusively defined by students' success in exams. This approach, which I refer to as test-oriented education, is problematical because, by overemphasizing students' performance in exams, it abstracts learning from their experience. The result is that learning becomes boring and useless to most students, and they do not see the relevance of education to life.

In contrast, Whitehead proposes that education be based on students' rich experience and that its aim should be their full self-development as beings imbued with body, mind and spirit. I refer to this approach as student-oriented education, and I believe it would provide more humane, well-rounded, and culturally appropriate forms of learning to Chinese students. More specifically, Whitehead's protest against inert ideas underlines the importance of two key concepts in education, namely the interest of students and the usefulness of knowledge. Second, his conception of learning, or "the rhythm of education," works as a guide in making education interesting and useful. Third, his account of technical education helps to restore a balance between abstraction and concreteness, precision and romance, discipline and freedom, education and life, and his insights on arts and aesthetic appreciation strengthen the life of the spirit by directing students' attention to the value and beauty in their lives. Finally, his advocacy of a balanced education enables a balanced development of students by paying equal attention to their bodily feelings, spiritual cultivation, and intellectual capabilities. In this manner, education can "evoke into life wisdom and beauty" which otherwise "would remain lost in the past".

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TABLE OF CONTENTS

PERMISSION TO USE.....	i
ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	iii
TABLE OF CONTENTS.....	iv
CHAPTER ONE EDUCATION FOR TESTING OR FOR LEARNING.....	1
1. Introduction to Chinese Education.....	1
2. Encountering Whitehead.....	2
3. Bodily Feelings.....	3
4. Student-oriented Education versus Test-oriented Education.....	4
5. Statement of the Problem.....	7
6. Significance of the Problem.....	9
7. Why a Whiteheadian Proposal for China?.....	10
8. Methodology.....	11
9. Chapter Summaries.....	12
CHAPTER TWO EDUCATION IN CHINA.....	14
1. Introduction.....	14
2. A Narrative of my Own Educational Experience.....	15
3. The Philosophical and Historical Background of Education in China.....	18
3.1 Taoism.....	18
3.2 Confucianism.....	19
3.3 The Imperial Examination System.....	21
4. The Political, Social, and Economic Background of Education in China.....	24
4.1 Mao's Educational Reforms: The Great Leap Forward (1958-1960).....	24
4.2 Mao's Educational Reforms: The Cultural Revolution (1966-1976).....	28
4.3 Education Reform under the Economic Reform and Open-door Policy.....	31
4.4 Higher Education Reform: Expansion through Marketization (1999-present).....	33
4.5 Quality-oriented Education (1999-present).....	37
5. The Current Education System in China.....	40
6. Summary.....	43
CHAPTER THREE AVOIDING INERT IDEAS THROUGH THE RHYTHM OF EDUCATION.....	46
1. Introduction.....	46
2. Inert Ideas.....	46
3. The Rhythmic Cycles of Learning.....	49
4. Educational Implications: The Rhythmic Claims of Freedom and Discipline.....	52
5. Summary and Application to Chinese Education.....	56
5.1 Summary.....	56
5.2 Application to Chinese education.....	58
CHAPTER FOUR A BALANCED EDUCATION AND ITS APPLICATION TO CHINA.....	60
1. Introduction.....	60

2. A Balanced Education.....	60
3. The Function of Technical Education.....	61
4. The Magic of Art and Aesthetic Appreciation.....	63
5. Application to Chinese Education.....	64
6. Conclusion.....	68
NOTES.....	72
BIBLIOGRAPHY.....	73

Chapter One

Education for Testing or for Learning?

1. Introduction to Chinese Education

Having been a student in China for fifteen years and a teacher for six years before coming to the University of Saskatchewan for a Master's degree in Education, I realized there was an urgent need for critical reflection on Chinese education. The question that had been puzzling me was what education was for? In fact, it is not at all difficult for any Chinese to answer this question, even for a grade one student. The answer is to pass a series of tests.

From the very first day a Chinese child begins to understand language, parents teach their children that if anyone asks you what you want to do when you grow up, tell them you will go to university. And parents are always proud when their children do as they are told, although they may have no idea of what university is, let alone what it means to go to university. However, when they begin to go to school, students understand: it means they will have to work day and night on their books to pass one test after another, and finally get the few passports issued for one out of hundreds of their peers to get to university. On the one hand, universities provide shelter from many failures among students and a destination for all the years of schooling; on the other, they ensure that the successful students find a sense of safety and enjoyment in learning, if their parents do not push them too hard to go on to a Master's degree or Ph.D.

In China's educational system, children are always highly pressured by competition and tests. From the first day elementary students enter school, they begin to work hard to reach junior high. During each semester they have to take at least two important tests set by their teachers, namely mid-term and final exams. When they finish elementary school, they face their first big exam set by a local education authority. Although Chinese education policy claims that every student has an equal opportunity for nine years of education, the purpose of this exam is to divide students into several levels, according to their performance in the exam. If a student gets a high mark, s/he will be assigned to a privileged school or class, known as *key school* or *key class*, equipped with better facilities and teachers, which will result in a better chance of promotion to senior high school and ultimately to university (Chen, n.d.). Therefore, parents always tell their children never to stop and relax during their schooling

because once they stop to take a breath, they will not be able to catch up with their classmates and will forever lag behind them.

Junior high school students face the challenge of having to drop out of school if they fail the entrance exam to senior high set by the local education authority. Although they take both mid-term and final exams set by their teachers each semester, it is the Senior High Entrance Exam that finally decides whether or not they can go on to senior high school. If the students are lucky enough to go on to senior high, they experience three years of intensive training in their courses. They continue to take mid-term and final exams each semester set by their teachers, but it is the College Entrance Exam set by the National Examination Board that decides whether or not they are eligible for university, the ultimate goal of their schooling.

The exams that students take, whether set by their teachers, the local authority, or the National Examination Board are all standardized tests, which require a lot of memorization and repetition. Before each test, students have to practice countless model tests so that they can be better acquainted with the exam questions likely to appear in the exam papers. Because of the elimination process of nine years of education, students work under great pressure both physically and psychologically in order to get to the final destination of their schooling, namely university. As a result, many tragedies occur. On January 17, 2000, a high school student in Zhejiang Province killed his mother as a result of the pressure from tests and his mother's pushing him too hard. On March 14, 2003, a 14-year-old girl died of overwork and pressure from schooling. She left behind more than twenty awards and certificates of honor, and four copies of a diary in which she said she dreamed of being a medical doctor, but would choose to be an educator to help relieve both students and their parents (Wang, 2004). In fact, it is not necessary to turn to these shocking tragedies to describe the harm brought about by the overemphasis on tests. If we look at today's schools in China, we find that the students work like machines while their teachers act as factory foremen at school and their parents play the same role at home. Education is related to anything but interest and enjoyment, which should be the characteristics of the life of children.

2. Encountering Whitehead

When I was in China I was aware that this approach to education was problematical, but could see no alternative. I decided to leave my teaching job and come to Canada to further my study in education so as to seek the answer to the question: what is education for? In a graduate course titled "Interdisciplinary Seminar in Foundations of Education", I encountered Alfred North Whitehead's work for the first time. The first topic I read about was *The*

rhythmic cycles of education, which seemed to touch my heart and spoke to what was inhibiting me. I rushed to the library and borrowed *The Aims of Education*, and was later fined thirteen dollars because I failed to return it on time. If my memory serves me right, it was the first time that I got so immersed in reading a book and felt the great power of the written word. And happily, I found the answer to the question which brought me across the Pacific Ocean to Canada. Education is for students!

Simple as it may sound, it is not at all easy to put this idea into practice. If education is for students, education has to be alive because students are alive (Whitehead, 1967b, p.v). To portray the liveliness and vividness of students, Whitehead (1967b) uses the metaphor of a stream, which is “compounded of sense perceptions, feelings, hopes, desires, and of mental activities adjusting thought to thought, which forms our life” (p. 3). He argues that learning occurs only when the student utilises the ideas she has acquired in her own life. “By utilising an idea, I mean relating it to that stream...” (p. 3). The student’s life is a stream, and unless abstract ideas are related to her daily life experience, they remain abstract and make no sense. It is through the flowing life of a stream, which is the child’s life, that she learns by deepening and broadening her knowledge and understanding of the world. Without taking students’ experience into account, education either produces “inert ideas”, ideas that students receive passively without understanding or utilising them (pp. 1-2), or it kills the best part of students, namely their craving for knowledge. Without ideas being related to students’ own life experience, learning becomes meaningless, boring and discouraging. For Whitehead, the elements comprising the life of the stream, which is the student’s life, are the bedrock to her learning.

3. Bodily Feelings

While Whitehead’s rich account of experience includes all aspects of a student’s life - “sense perceptions, feelings, emotions, hopes, desires and ... mental activities adjusting thought to thought” (1967b, p. 3) - he “comes to recognise bodily feelings as the core of experience” (Fidyk, 1997, p. 74). It is the student’s body that affords a primordial form of perception, which Whitehead calls “causal efficacy.” Unlike Descartes and Hume, for example, who overlooked the importance of the subject’s body in the process of perception, Whitehead recognizes “the antecedent functioning of the body in sense perception” (Whitehead, 1929, p. 98). Knowledge of reality flows from “the ‘withness’ of the body. It is this withness that makes the body the starting point of the circumambient world. We find here our direct knowledge of ‘causal efficacy’” (p. 98). Knowledge of causal efficacy, then, is grounded in

the student's body, which is always present in experience, enabling her to become aware of the world as in a process of change or becoming.¹ The need to pay close attention to this basic fact led Whitehead to write earlier in *The Aims of Education* that "I lay it down as an educational axiom that in teaching you will come to grief as soon as you forget that your pupils have bodies" (1967b, p. 50).

The importance of emotions for Whitehead cannot be overemphasized. Since bodily feelings are often preconscious, it is through the emotions that we can gain access to the frequently submerged feelings at the core of our experience. Emotions, however, are at least partially conscious. When we display anger at somebody, for example, we experience the ripple effect of our bodily feelings as an ongoing flow of energy coursing through our being (Whitehead, 1938, p. 22). Flynn (1995) interprets Whitehead's account as follows: "For human beings, therefore, emotions are the initial link between bodily feelings at the base of our experience and our conscious awareness of that experience. They enable us to interpret these feelings and recognize the manner in which they connect us directly to the world" (p. 376). By paying close attention to our emotions, we are able to interpret the bodily feelings connecting us with reality.

This observation about the centrality of emotions is crucial for education. When reading a poem, for example, students should be allowed to think, feel, and interpret it freely. Whatever the interpretation given, a teacher should appreciate her students' diverse understanding and ideas based not only on her own experiences, but on the experiences of her students as independent beings with their own feelings and emotions. Only when students are encouraged to express their emotions in words or other forms of aesthetic activity, will the power of the poem be felt by them. Otherwise, the poem will remain abstract and lifeless, nothing but a few lines for students to memorize. The fundamental importance of bodily feelings to learning must be recognized for they are the most direct and concrete parts of students' life experience, and it is the students' emotions which enable them to become aware of the bodily feelings which connect them with the world. Through this process, students can learn to make abstract ideas their own and express themselves in concrete and imaginative ways.

4. Student-oriented Education versus Test-oriented Education

For Whitehead (1967b), "there is only one subject-matter for education" (p. 6), which is the students' life, flowing like the current of a stream. When education is for students, the aim of which is to understand them as live human beings, it has to revolve around the students' life.

That is, their bodily feelings, emotions, health, interests, desires, ideas, values and self-development. The students are now the core of education, in body, mind and spirit, and “the purpose of education is to stimulate and guide their self-development” (p. v) as whole beings - intellectually, physically, emotionally, and spiritually. This notion that education is for students means that teachers, headmasters, parents should no longer play the leading role in students’ learning as happens in China today where students become “subordinate elements” (Whitehead, 1967b, p. 34) to exams. “This self-development idea highlights the initiative that comes from within the individual learner” (Moore, 1998, p. 13), and shows that the spark that initiates the process of learning comes from within the student. The same idea is developed by Scarfe as follows: “For instance, in the classroom setting, students learn by seizing the data presented by the teacher, making them their own, transforming them, and applying them to the actualities of life, toward their educational self-realization and satisfaction” (2005, p. 126). This is a learning process towards self-development, which Whitehead views as “valuable intellectual development” (1967b, p. 1). In this process, the students are active subjects, not passive objects. Their interest, understanding and experience constitute the basis of the whole learning process.

Modern test-oriented education in China ignores all of the important aspects of students’ lives and treats them as “dead matter” (Whitehead, 1967b, p. 5) instead of as a flowing stream. It does not consider the uniqueness of each student and recognize the fact that students’ learning is based on their bodily feelings at the base of their experiences. Instead, learning is examined through students’ performance in exams, in which they are all scored according to whether or not they have put the so called “key” points in their answers. In such education, whatever students feel and think is not important. The sole criterion for a good child is his or her scores in exams. Other human qualities, such as caring, loving and sharing, are not at all important even though some school mottos claim that they are. In reality, the solitary aim of education is to produce experts in passing exams, which is not difficult to find if we look at how teaching and learning are dominated by exams at schools. Teachers spend much time studying the entrance exam papers of previous years so that they get to know what questions are likely to appear in the next entrance exam so as to prepare their students for these questions. Accordingly, students are trained to focus on and adapt their thinking to the possible exam questions by doing countless model exam papers so that they will have a good performance in the final entrance exams. In doing so, anything that does not serve this goal is considered as a distraction.

As a teacher strongly opposed to an education with an overemphasis on tests, I propose that it be replaced with Whitehead's educational thought as a form of student-oriented education. This term will be used throughout the thesis both as a challenge and an alternative to test-oriented education, illustrating that students should be at the core of education. Whitehead views the student as a whole person, and education, for him, is far beyond exams. It is about "how to develop a complete human being", whose "mind, body, emotion and spirit should be developed at the same time and be integrated into the whole person" (Fan, 2004, p. 1).

However, it should be understood that Whitehead (1967b) is not totally opposed to tests. He criticizes the uniform external examination as "deadly" (p. 5). He warns that education deals with "human minds", not "dead matter" (p. 5). But the uniform external examination views students as exam machines and focuses too much on mechanical memorization and repetition. When students are overwhelmed with such tests, their ability to think independently is stifled and they easily get into the habit of reading the textbooks, taking notes in class and learning them by heart without any genuine understanding of them only to be well prepared for "the questions likely to be asked at the next external examination" (pp. 4-5). As long as one can get a high mark in the exam, s/he is considered a good student with a bright future. That's what learning is all about in test-oriented education. However, for Whitehead (1967b), understanding is important because it is "an understanding of an insistent present" (p. 3) based on students' concrete experience and imagination. In this way, the knowledge from the past comes alive as students put whatever they have learned into practice. If education does not encourage understanding, it is not learning, but anti-learning, because it fails to generate enthusiasm and joy of learning in pupils, and contributes to the boredom of students by discouraging them to relate knowledge to their everyday lives. The transmission of fragmented information without any consideration for pupils' needs and feelings requiring lots of memorization kills off the most important elements in pupils' learning - "interest", "the very motivation to learn", "curiosity", "inquiry" and "creativity" (McMurtry, 2003, p. 16). With an overemphasis on writing tests, students are blinded and cannot see the true value of knowledge, especially "its use" (Whitehead, 1967b, p. 32) in our everyday life. Such education that leads to "the certain destruction of their enjoyment" in learning should, according to Whitehead (1967b), "be prosecuted for soul murder" (p. 57).

If there are to be exams, Whitehead (1967b) wants every question to be directly asked, framed or modified by "the actual teacher of that pupil" (p. 5) because s/he understands "the intellectual type of the pupils" and "their prospects in life" (p. 5). In other words, exams must

be set up very carefully according to the unique characteristics of each student if they are to have any effect on students' learning. Otherwise, "the uniform external examination" is not only useless, but "deadly", because it "kills the best part of culture" (p. 5), which is the "activity of thought, and receptiveness to beauty and humane feeling" (p. 1). I shall consider Whitehead's concepts of beauty and humane feeling in chapter four. When a student is preoccupied with endless exam questions, she is likely to stop thinking for herself, since the exact answers have already been worked out by some distant authoritative figure. Whatever her own experience the only course of action is to put down the "right" answer she has learned by heart. In contrast, Whitehead (1967b) points out that "education must pass beyond the passive reception of the ideas of others" (p. 47) so as to attain full self-development.

5. Statement of the Problem

The problem that I consider in this thesis is that the Chinese educational system is almost exclusively concerned with testing students so that they are continually exposed to taking exams from the earliest age. As a result, learning is defined exclusively by student success in exams, and failure results in a variety of problems, both individual and social. This approach is what I refer to as test-oriented education. In contrast, I believe that a student-centered education based on the work of Alfred North Whitehead would provide more humane, well-rounded, and culturally appropriate forms of learning to Chinese students. A Whiteheadian approach recognizes the foundational character of bodily feelings in learning, emphasizes emotions that make students realize their feelings which connect them to the world, and aims at developing students' full potentiality based on their interest and enjoyment

On the basis of my own educational experience as both teacher and student, and an analysis of the history of education in China, more particularly the role that examinations have played for the last two thousand years, I show how it is dominated by exams. I refer to the works of Cleverley (1991), Chen (1981), and other papers on Chinese education, notably by Wang (2004) and Fan (2004). I go on to explain why there is an urgent need for a reorientation of the modern test-oriented education by exposing its existing problems. By means of an analysis of Whitehead's educational philosophy, I underline the urgency of such reorientation and propose an alternative for Chinese education today, one in which a constructive articulation of student-oriented education is central.

There are several destructive consequences of the current over-emphasis on testing in Chinese education. First, those who fail the exams are made to consider themselves as losers. Throughout their previous years of schooling they have been told that if they fail, they

themselves are a failure. As a result, many students experience difficulty after leaving school. “Some of them have emotional problems. Some of them have no goal but to make money”. Some of them even commit crimes against people or society because they think it is unfair that an exam can make their lives so different from those of their peers (Fan, 2004, p.4).

The second destructive consequence is that test-oriented education does not enable students’ all-round development. Focusing only on students’ skills in passing tests while paying no attention to their feelings and emotions means that competition is valued over cooperation and friendship. It totally ignores other important human qualities and virtues. Among these are “self-respect” (Wang, 2004, p. 4), which is evident in “the refusal to do less than one’s best”, and the inability to exhibit ‘the love of what one does’ in ‘a passionate, focused engagement in one’s work’ or ‘the pleasure of sharing one’s work with others’” (Brock, 1992, cited in Wang, 2004, p. 4). In other words, test-oriented education “may unintentionally teach students to become poor members of the larger community” (Cobb, n.d., p. 1).

There is another destructive aspect to test-oriented education, according to Whitehead (1967b), namely that it produces “inert ideas” (p. 1), or ideas that are not understood, utilized and tested because they are not related to the students’ experience. Being infected with inert ideas is destructive because it is similar to having the wrong food in one’s stomach (p. 33). When one eats unpleasant food, one’s stomach reacts to it and causes discomfort, or worse. This is also true when students become infected with inert ideas, which can result in a similar discomfort, not only physically, but spiritually. Whitehead (1967b) criticizes this kind of education as “not only useless: it is, above all things, harmful” (pp. 1-2).

Whitehead (1967b) continues to warn against the dangers of inert ideas and advocates the utilization of knowledge for the present: “The only use of a knowledge of the past is to equip us for the present. No more deadly harm can be done to young minds than by depreciation of the present. The present contains all that there is. It is holy ground; for it is the past, and it is the future” (p. 3). In education the present is where the past and the future meet. When knowledge from the past is transferred to the present, the individual feels its power by utilizing it, which instils love and enthusiasm for further learning so that future discoveries will be made possible (Phipps, 2005, p. 187). That is to say, whatever a pupil learns, let her practice it and make it her own. Whenever and wherever there is knowledge, there should be practice. When knowledge is frequently utilized and related to their lives, students feel its power and the joy of learning is kept alive. In contrast, the philosophy underlying test-oriented education in China that students first accumulate knowledge and utilize it only when

they are ready for work is misconceived, because knowledge without immediate practice “does not keep any better than fish” (Whitehead, 1967b, p. 98).

Take learning English as an example. If a student were always told to memorize all the grammatical rules, structures and vocabularies and never given the chance or guidance to open her mouth and communicate in English, how could she perform her role as an interpreter armed only with pieces of information about grammatical rules and sentence structures? Only when theory is constantly related to practical experience can the entire learning process be enhanced and enjoyed by students. Only when imagination is wielded with experience in both learning and teaching, will the “zest of life” (Whitehead, 1967b, p. 93) be preserved in teachers and students alike.

6. Significance of the Problem

The overemphasis on competition and individual success in China encourages students to work only for their own self-interest and blinds them to the importance of connection, cooperation and friendship. With the growth of economic development and national modernization, money becomes the sole pursuit of the whole society, and knowledge and education become exclusively a means to an end. There is no freshness and wonder in teaching and learning because knowledge is nothing but a tool for earning money. Life itself is not interesting any more, because for the poor it consists of nothing more than making a living, and for the rich it is all about making more money.

In contrast, Whitehead (1967b) views students as whole beings, whose life is not abstract but a flowing stream, “compounded of sense perceptions, feelings, hopes, desires, and of mental activities adjusting thought to thought” (p. 3). Education is not primarily a matter of going to university, finding a good job or making good money but more about what he calls the “comprehension of life” (p. 12). In his words, education should aim at guiding “the individual towards a comprehension of the art of life”, by which he means “the most complete achievement of varied activity expressing the potentialities of that living creature in the face of its actual environment” (p. 39). Simply put, education should work towards developing an individual’s full potentiality in a way which not only imparts pure knowledge, but cultivates a way of living: learned, open, active, appreciative and imaginative.

Whitehead’s philosophy of education provides insights that, if implemented in China, could relieve some of the problems experienced by both students and teachers. Students would be emancipated from boredom, physical overwork, spiritual stupefaction and moral devaluation, which are the typical problems in the modern test-oriented education in China.

By focusing on students, teachers would realize what is really important in teaching and be free to impart it to students instead of merely developing their test writing skills. As a result, both learning and teaching would become active, meaningful and constructive, and teachers and students would “become active explorers of future possibilities” (Phipps, 2005, p. 163).

Whitehead’s emphasis on the imagination is also of great importance, because it enables students to contemplate possibilities to any question. This means they will not be limited to one right answer. Questions can be open to different interpretations, and problems can be solved imaginatively, freely and openly by individuals in communities of learning. In a climate which is supportive of diverse opinions and ideas, an individual is able to recognize a connection between his or her own interests and those of others by openly sharing their understanding. Thus, “morality of outlook is inseparably conjoined with generality of outlook” (Whitehead, 1929, cited in Woodhouse, 2005, p. 134) and “the individual and common good are mutually supportive” (Woodhouse, 2005, p. 134). Instead of feeling lonely, helpless and desperate, the imagination enables one to feel a connection to other people near and far away, to nature and even to the whole universe. By looking at the stars in the sky, one may feel some energy from the universe flow in the body, and by imagining coming to Canada, someone in China may feel an impulse to learn English well. The imagination helps people to break out of stereotypical and closed frameworks and look zestfully towards a far away yet reachable space and time. This is part of what Whitehead (1967b) means by saying “the learned and imaginative life is a way of living...” (p. 97).

7. Why a Whiteheadian Proposal for China?

Whitehead’s educational philosophy, while Western in origin, has a strong appeal for Chinese education because of its openness to other cultures and the flexibility inherent in it. As Cobb (n.d.) remarks, for Whitehead, there are no definite answers to questions, or solutions to problems. His educational thought “provide(s) lenses for viewing the whole situation and identifying the questions that need to be asked. It introduces considerations that are sometimes neglected and makes proposals for possible implementation” (p. 1). In Wang’s (2009) words, Whitehead’s philosophy is characterized by its pluralism and opposition to dogmatism, which means it works well with different cultures and traditions. In the context of this thesis, my proposals for a student-oriented approach to education based on Whitehead’s educational thought should take into account the actual environment of Chinese education. That is to say, while Whitehead may have important suggestions for the reform of Chinese

education, the implementation of his ideas depends on the creative abilities of the whole Chinese nation.

In fact, Whitehead's process philosophy has already received a warm welcome from the Chinese government, and new reforms are currently being enacted which are based on his insights. Among these has been the establishment of "the Harmonious Society," whose goals are harmonious relationships both with humans and with nature, and "The Ecological Civilization," another group whose work echoes Whitehead's belief in ecological justice (Todd, 2008). In the field of education specifically, Wang (2009) states that Xiaoman Zhu, "the president of the National Central Institute for Education Studies and the head of the National Education Plan Office in China identifies herself as a Whiteheadian" (p. 12). She has been "greatly influenced by Whitehead's book, *The Aims of Education*" (Todd, 2008). The works of two American process philosophers, David Ray Griffin and John Cobb, have become textbooks in universities where the study of Whitehead's philosophy is already taking root. Even more promising is the fact that in the past ten years, "18 university-based centers" have been established "for the study of Whitehead's philosophy" (Todd, 2008). China's attitude toward Whitehead, is reflected in the fact that John Cobb, "an American philosopher who was raised in Asia and now works closely with China's top thinkers" is amazed "by the way leading figures in China have become excited about Whitehead, showing far more interest than most North Americans and Europeans" (Todd, 2008). In Todd's (2008) words, China currently "embraces" Whitehead.

8. Methodology

The methodology for this thesis is based on three approaches: first, an introduction to education in China in general through a consideration of relevant literature, and a reflection on my own educational experience, in particular; second, a critical analysis and interpretation of Whitehead's educational philosophy; and third, a constructive articulation of the notion of student-oriented education reflected in Whitehead's philosophy of education as it relates to Chinese education.

By means of the three approaches, I will express a deep concern for today's Chinese education and articulate the need to reorient the dominant test-oriented approach towards the kind of student-oriented education advocated by Whitehead.

Grounded in my own educational experience and my knowledge of education in China, I will make my interpretation of Whitehead's educational philosophy by using the same method that he proposes:

....the true method of philosophical construction is to frame a scheme of ideas, the best that one can, and unflinchingly to explore the interpretation of experience in terms of that scheme. (Whitehead, 1929, p.x)

In the context of this thesis, I make meaning out of Whitehead's educational philosophy by reflecting upon the current test-oriented approach to Chinese education so as to propose a student-oriented approach as an alternative and improvement. In this way, I relate Whitehead's educational ideas to the problems I encountered in my educational experience in order to show how they would provide freshness and a vivid perspective to the student-oriented approach. However, ideas, for Whitehead, are always open to interpretation and reinterpretation based on experience. Therefore, my interpretation of Whitehead's educational work is not final but open to further reflection and interpretation based on my changing experience and that of others. Through the process of interpretation and reinterpretation, ideas are made possible for "criticism and improvement" (p. x).

9. Chapter Summaries

In this chapter I have given a brief introduction to test-oriented education in China and analysed the problems it has caused at school and in society. In order to relieve these problems, I have proposed a new approach, namely the student-oriented education advocated by Whitehead. In such an education, students are considered as the most important factor, and exams, if there are any, are not the aim of education, but a vehicle to help enable the self-development of students.

Chapter two explores the history of education in China. I trace this history back to Confucius when the imperial examination system was first introduced about two thousand years ago. I then examine education during Chairman Mao Zedong's time, and go on to give an account of a series of educational reforms since China's adoption of the economic reform and open-door policy. By reviewing the historical evolution of Chinese education, I show how the examination system came into being and how it has influenced people's lives over a long period of time.

Chapters three and four illustrate the relevance of Whitehead's thought for Chinese education. Chapter three is an interpretation of Whitehead's conceptions of learning, especially his account of the rhythmic cycles of growth and the aims of education. On the one hand, this interpretation explains the weaknesses of the linear learning theory underlying test-oriented education in China, and on the other, introduces a new theory of learning to Chinese education which emphasizes the natural development of students' learning.

Chapter four goes on to look at Whitehead's account of an integrated curriculum based on literary, scientific and technical education. For Whitehead, each student is a whole being composed of body, mind and spirit, and he argues that education should pay attention to all three so as to enable their balanced development. The problem with Chinese education is that it aims only at developing students' minds through an education based on science without any consideration of their body and spirit. In order to show the importance of Whitehead's account of technical education for Chinese educators, I consider the ways in which his insights on art and aesthetic appreciation can enhance the liveliness of students and enable their growth as whole, balanced, and harmonious beings.

Chapter Two

Education in China: A Historical and Philosophical Overview

1. Introduction

Throughout its history, education in China has gone through significant changes, but exams have always been a major theme. In 1999, a national education reform focusing on curriculum reform was initiated. Realizing that academic curricula were overloaded, that students were under pressure, and their talents and creativity suppressed, the Communist Party of China decided that the primary goal of schooling was to develop students' all-round abilities and prepare them for the fast-changing economy. The government reform encouraged schools to create a climate that favored student debates and after-school activities such as sports, music, art, and entrepreneurship clubs, which help relieve students from overwork and develop their imagination and creativity.

Ten years have passed and the reform has realized some achievements. However, because the College Entrance Exam still dominates all school years from elementary to senior secondary, the reform has encountered difficulties in implementation, and the aim of teaching and learning is still success in exams. Many educational specialists admit that as long as the current examination system remains unchanged, the burden on students will not be alleviated in a true sense and the reform will not achieve its stated goals ("Harmful 'key school' system must be ended," 2006).

All of this begs the following question: since the examination system gives birth to so many problems, why is it still in existence? This is a question that has been puzzling many Chinese students and teachers. Unfortunately, they seldom have time to try and figure out why they have to suffer the burden of exams and how they can change the situation.

In this chapter, before introducing the current education system in China, I will first refer to my own personal educational experience to present a clear picture of how a student's life is influenced and dominated by tests, and how teaching and learning restricted in the same manner. Bearing the above question in mind and taking my own experience as a starting point, I will then explore the historical and philosophical background in which the current examination system has taken root and the socio-political and socio-economic context in which test-oriented education is currently unfolding. I will trace the story back to two

thousand years ago when two well-known Chinese philosophies, Taoism and Confucianism, were dominant, and the initial tests, namely the Imperial Examination System, began. Then I will examine education at Mao Zedong's time when the Great Leap Forward and the Cultural Revolution were initiated. I will also review the educational reforms after China adopted the economic reform and open-door policy. Last I will give an account of the current Chinese education system.

2. A Narrative of My Own Educational Experience in China

If I were asked to use one word to describe my thirteen years of schooling in China, it would be "lucky", because I was a survivor of a series of tests. I saw many of my classmates drop out of school, some happily and some with tears. Some were happy because they didn't have to face another test, and others were sad because they would have still liked to go on with their schooling if they hadn't failed the exam. Whatever their feelings were, they didn't have a choice. It is cruel that many of my classmates worked very hard during their three years of senior secondary school study and couldn't realize their "dream of university" only because they didn't get a good mark in the final entrance exam. It is even worse that many of my elementary classmates had to quit school at the age of twelve or thirteen because the examination system didn't allow all of us to go on with junior high school at that time before the nine-year Compulsory Education Law was finally carried out in Inner Mongolia in 1989, although nationally approved in 1986. I still remember when the scores were announced, my teacher said to me, "well, well, you did much better than I had expected." Although I was only eleven years old, I felt hurt when he expressed his surprise because I only got three points more than the cut-off line. But I had to admit that "luck" really made the difference because some of my classmates performed better than me during five years of elementary study yet failed the final exam and had to quit school.

The percentage of students eliminated from schools at that time was quite high although the percentage of those who succeeded was also getting higher. In 1988 when I was in grade five there were about fifty students in our class, and only twenty were promoted to junior high. In 1991 when I was in grade eight there were about sixty students in our class, and only nine were able to go on to senior secondary school. In 1994 when I was in grade eleven there were about nine hundred students attending the college entrance exam in our school, and only about seventy were able to enter university.

To some extent, the school is like a "casino", and schooling is like "gambling". It does not matter what you have learned or how well you have performed during the semester. If you

pass the entrance exam, you win; if you fail, you lose. In order to pass a series of tests, one not only has to work very hard and know all the subjects very well, but be psychologically strong enough to cope with the pressure and face the possibility of failure since luck also plays a very important role in any exam. It is not at all unusual that some students get sick or even faint at the sites of big exams because of the stress. One of my classmates was not good at physics and fainted when she was taking the physics test for the college entrance exam. Another classmate of mine had a very good academic performance, yet failed the college entrance exam three times because she was too nervous and stressed, and finally had to give up. The sight of many parents at the gates of the school in the hot month of July, including my own father waiting silently and anxiously for me after each test for the college entrance exam, meant that I could not get enough sleep. "University" was not only my intended destination after years of schooling, but the whole family's dream. How would I face them if I failed the exam and broke their dream? I didn't even dare to think about this.

Fortunately, I passed the college entrance exam and was able to major in my favourite program - English. I was happy that all my years of effort finally paid off, and my parents, brother and sister were proud that they had a university daughter and sibling. Not until one year after I went to university did I ask myself the question, "What is the point of my hard work during the previous years of schooling?" This took place when a senior secondary school boy in my neighbourhood asked me a question about physics. Oh, my God! I had no idea! It was not only that I could not figure out the question, but that I did not even know what the question was about. I told myself that maybe it was because I had always hated physics. So I opened my favourite chemistry textbooks, and still found that I had forgotten almost all that I had learned during three years of senior secondary school! I was shocked, and sad.

For the first time in my life I began to doubt the worth of my hard work in studying. Since the first day I entered school, I spent almost all the time on study, especially during the three years of senior secondary school. But suddenly I found that all my hard work came to nothing. What I had learned by heart and worked on over and over was now a total blank in my memory. I could not understand why. I talked about my puzzle with one of my roommates in university, and she gave me a very brief answer, "Without the previous hard work, how could you pass the college entrance exam and come to university? You're now at university. That is the point." Yes, she was right. But after all these years of hard work, I should deserve more than just a ticket to university. The sad thing was that I had been so overwhelmed with the college entrance exam that I had never thought of this before. I had a deep feeling that

there was something missing in me, and in my university classmates too, but could not tell what it was.

University life was quite different. After years of hard work, we took university as a place where we could finally relax and enjoy ourselves because we did not have to face another big exam. As long as we could pass the final exam for each required course, we were doing fine. Usually, in order to pass the exam, all we had to do was to spend a couple of weeks going over the textbooks and the notes we took in class. Having taken so many exams, big and small, we were all quite skilled at this. Some students did not even attend classes at all and spent most of the time sleeping, playing games, shopping, making friends or just doing nothing. Without the pressure of exams, we lost the motive for learning.

Four years passed quickly. At the end of our university journey most of us chose to work and a few chose to attend the entrance exam for a Master's degree. For most of us, we could finally rejoice, "The days for exams are finally over!" However, for me, it was a new beginning, because for whatever the reason, I became a university teacher in English.

This time I did not attend exams, but I examined my students. I tried to teach whatever was in the textbooks and make them learn, but I found that many of my students were not interested in learning English at all. All they cared about was what questions would be on the final exam, and whether or not I would let them pass the exam. Having gone through years of the same student journey myself, I could understand them, but it was discouraging and sometimes heartbreaking to teach a group of students who did not really enjoy my lectures. I hated to force those who did not like English at all to learn English, but had to, because they had to pass an English Band III Test to get their Bachelor's degree. I hated to threaten them with a final exam, yet could not find any other way to motivate them to learn. I had known for a long time that students should be internally motivated to learn, and wrote my graduation thesis for my Bachelor's degree on learning motivation, but did not know how to build their internal motivation in practice. I felt ashamed when I was awarded The Best Teaching Prize for three consecutive years and got a raise in salary, too. However bad I felt, I did not know how to interest my students and kept dulling them day after day until one day I realized that if I kept teaching like this for one more day, I would never change. Although I could not see any alternative, I believed teaching and learning should not be so boring and miserable, and schooling should not be only directed at passing exams. Finally, I made up my mind to quit the teaching job and came to Canada to continue with my study of education with the hope of finding an answer to my puzzles and struggles. This is exactly what this thesis is about.

I believe many other Chinese students have had similar experiences - the hard work, physical and psychological pressure, the intense competition, teachers and parents' expectations, the confusion, frustration, and sometimes helplessness of having to study all the time yet without knowing the aim of studying. To understand the meaning of my educational experience, it is necessary to trace Chinese education back to its historical and philosophical roots and to analyse its socio-political and socio-economic milieu. This broad context will help answer a few questions: How did the examination system in education come about? How has education affected people's life at different times in history? Why does the whole of Chinese society attach so much value to education? What roles does education continue to play? Why is there still vigorous competition in education after several reforms have been introduced and carried out?

3. The Philosophical and Historical Background of Education in China

A few well-known philosophical systems in Chinese history thrived during the period known as the Golden Age (770-221 B.C.), and they have had a huge influence on Chinese education. Among those are Taoism and Confucianism. However, Confucianism, with its ideas of uniformity and harmony and its concern for social stability, was later proclaimed by the emperor Han (221 B.C.-220 A.D.) as the most efficacious and it dominated China for over two thousand years.

3.1 Taoism

Taoism is well expressed in two classical texts known as *Tao te ching* (Daodejing) by Laozi (Laozi) and *the Chuang-tzu* (Zhuangzi) by Chuang-tzu (Zhuangzi) and his disciples. "Tao" (*dao*) is always translated as "the way", which is the central idea of Taoism. Taoists believed that the world has an inherent way, through which the whole universe reaches its harmony and keeps its order. Therefore, to be harmonious in itself and with others, every living thing is to follow its way. Taoism views all living things as equal, and human beings are not superior to them. "The true source of all order and harmony is the natural reality of the Tao, and willful human activity of any kind - however well-intentioned - can only interfere with it" (Kirkland, 1996, p. 2). The Taoists asserted that "the world had been in perfect harmony until humans began trying to 'improve' things. So the true goal of human life, both individually and collectively, is to 'un-learn' such typical but 'unnatural' behavior, and to return to the patterns implicit within the benign natural order" (p. 1). Simply put, Taoists suggested that

“no actions” (*wuwei*) were the chosen path to let things go on in their own way without deliberate human intervention.

From the perspective of “the way” or “no actions”, Taoists’ attitude toward education becomes clear. They regarded education as not only unnecessary, but also harmful. “Taoist thought clearly implies that *children have no need whatsoever to be molded or uplifted*: young humans, like all living things, are naturally guided to a natural fulfillment, in harmony with the rest of the world” (Kirkland, 1996, p. 2). Taoism is in sharp contrast with Confucianism, which advocated the idea that an individual comes to his fulfillment through education and a prosperous and peaceful society could be obtained if its people keep learning and improving themselves. Rather, Taoists saw all these deliberate efforts for a change as harmful because they were not following “the way”.

Because Taoism advocated equality and natural development, it failed to convince the rulers of its value, since they wanted absolute power over their people. As a result, Confucianism became the dominant philosophical system in China.

3.2 Confucianism

The originator of Confucianism was Confucius (551 B.C. - 479 B.C.), whose philosophy was interpreted and developed by his followers and later led to Confucianism (*rujia*). The influence of Confucianism on Chinese education is enormous. Actually, “the historical importance of education in Chinese culture is derived from the teaching of Confucius”, known as a great sage, thinker, philosopher and educator. He lived during the Eastern Zhou Period (770-221 B.C.) when China was in a state of war and chaos. “Fundamentally, his philosophy taught that social harmony could be achieved only if humans were free from deprivation and given proper education”. Moreover, “Confucius believed that all people possessed the same potential”, and that education was the effective means to develop it and make people grow apart (“Confucianism and the Chinese scholarstic system,” n.d).

Living in a very strict feudal system when education was only accessible to those families of high social status, Confucius, for the first time, “made education available to students from all classes”. His remark that “in teaching there should be no class distinctions” supported his outlook of meritocracy (“Confucianism and the Chinese scholarstic system,” n.d.). To put his ideas into practice, Confucius opened China’s first private school where over three thousand students from all walks of life followed him and studied his philosophical ideas. “After finishing their education disciples were enjoined to apply themselves and their knowledge to good government in China” (Cleverley, 1991, p. 4).

Deeply concerned with social stability and harmony, Confucius' teaching focused not only on individual cultivation and development, but also on ethical and political instruction, which was reflected in his view of *ren*, *li* and *junzi*.

Ren is the fundamental virtue of Confucian teaching and is often translated as "benevolence", or being loving and kind to others. *Ren* is expressed through the recognition of value and concern for others, regardless of their rank or class. It "was not an abstract concept removed from daily life, for *ren* developed out of fulfilling one's obligations to family and the community" ("Confucius," n.d.). It dealt with one's relationship with others, which Confucius listed as emperor-subject, father-son, husband-wife and the elder-the younger, in all of which the former were the superior and the latter inferior. With a combination of obedience of the latter to the former and mutual benevolence, harmony was to be built in a family, community and state where everyone performed her own role properly. This expressed Confucius's political concern, namely that a ruler should treat his subjects humanely and, in return, the subjects should obey their ruler wholeheartedly. His concept of *ren* was best signified in his famous saying "do not do to others what you do not want them to do to you" ("Confucius," n.d.).

With the concept of *Ren* deeply felt in one's heart, *Li* is regarded as a function or vehicle by which to express *ren*. In this sense *Li* is often translated as "propriety", "rites" or "proper behaviour". It concerns one's behaviour in everyday life from dressing to eating to talking, and became an all-embracing system of social norms.

Junzi refers to a person with a combined virtue of both *ren* and *li*, the ultimate goal of Confucian teaching. It is often translated as "gentleman" or "a man of nobility". *Junzi* was the exemplary model of the society, who was expected to "perfect himself through a life-long engagement of moral self-cultivation" (Tan, 2003, p. 4). He is "someone who embodies the virtues of propriety", being filial and loyal, appropriate and humane (p. 4). "Confucius often contrasted the *junzi* with the *xiaoren* ('petty person'), a self-centered and individualistic person whom he portrayed as selfish, calculative, unrefined and vindictive" (p.4). Therefore, "the quest to become a *junzi* should not be understood as a selfish, individualistic quest for its own sake, but rather within a wider context of human relations in society" (p. 4).

It is important to note that Confucius was concerned with the peace and stability of society, and it was his desire that the rulers behave ethically and make an example of themselves as *junzi* so that the subjects who were supposed to obey them would do so. He said,

If the people be led by laws, and uniformity among them be sought by punishments, they will try to escape punishment and have no sense of shame. If they are led by virtue, and uniformity sought among them through the practice of ritual propriety, they will possess a sense of shame and come to you of their own accord. (*Lunyu* 2.3, cited in Riegel, 2006)

He taught that the government should treat the people with love and care. Only when the rulers were willing to be guided and act on moral principles, would their states become strong and prosperous. Education, for Confucius, should aim at cultivating people towards *ren, li and junzi*, which in turn would lead to a stable society and a loving and caring government.

Although Confucius failed to convince the rulers of his time to adopt his philosophical ideas, “Confucianism was chosen by Emperor Wu of Han”, who used it “as a political system to govern the Chinese state” (“Confucianism,” Wikipedia, the Free Encyclopedia, 2007). Since then Confucianism became a mainstream Chinese philosophy for over two thousand years. Later when the imperial examination system was introduced, Confucianism gained its greatest popularity, which makes it necessary to examine the imperial examination system and its relationship with Confucianism.

3.3 The Imperial Examination System

The representative works of Confucianism are known as *The Four Books* and *The Five Classics*, which for a long period became the traditional curriculum of Chinese education and the ethical and social norms of Chinese society. With the belief that people who followed Confucian philosophy would make the most honest and moral officials, the emperors recruited their officials through a system of examinations that tested their competency in Confucian philosophy, namely *the Four Books* and *the Five Classics*. Anyone who wished to have a career as a government official, which was a highly regarded social position, had to memorize *the Four Books* and *the Five Classics* in the hopes of doing well in the examinations. As early as the Han Dynasty, the examination system had been used to select able men for public service, but it was not until the Sui-Tang period (581-907) that the examination procedures were codified and the well-known imperial examination system began in China. Before the Ming Dynasty, the imperial examination system “took its final shape and was taken over without major change by the Qing Dynasty which preserved it until 1905” (Cleverley, 1991, p. 16).

The imperial examination was taken at three levels, locally, provincially, and nationally. Those who passed the local exam were able to write the exam set by the province, and if they passed the provincial exam, they would write the metropolitan one. Those who passed the

metropolitan exam were able to work in the central government, but in order to decide the ranking of those who passed, they were called to the palace to take the palace exam. Those who passed the local exam yet failed the provincial one were usually hired as private tutors by local rich families, and those who passed the provincial one yet failed the metropolitan exam were recruited by different provinces to serve in a lower official post. Thus different positions at different levels were filled in this way.

Before the examination system was introduced, officials in the government were mainly recruited through a recommendation by other officials, and those who were recommended were usually from families of high social status or with political connections. Therefore, it is important to note that the imperial examination system at that time had two functions. On the one hand, it helped rulers to recruit officials from all backgrounds; and on the other, it made possible “for a man from humble origin to move into a position of political power” (Cleverley, 1991, p. 16). “Education in China has thus been an equalizing force from ancient times. It became the means by which individuals from even the humblest backgrounds could rise to great heights” (“Confucianism and the Chinese scholarstic system,” n.d.).

However, there were some imperfections with the exam itself. “One serious deficiency was the ‘tunnel vision’ which the examination system encouraged” (Cleverley, 1991, p. 20). In reality, the exam was a test of Confucian knowledge. In the earliest stage of the imperial examination system, the examination also included tests in some professional areas and allowed some personal understanding and interpretation of Confucian philosophy. Later in the Song Dynasty and onward, the requirements of the examination system became more and more rigid and formalistic.

Examination success called for an excellent memory, knowledge of the Classics and their approved annotations, of conventions like avoiding characters used in the personal and after-death names of Emperors of the reigning dynasty and of the highly stylized ‘eight-legged’ essay form, and the accomplishments of an elegant calligraphy and an uncorrected text. (Cleverley, 1991, p. 20)

Meeting these requirements in the exam “left little to the imagination” and “excluded those studies which had practical utility”. This resulted in “conditioning through the imperial examination which made it difficult for the Chinese educated class to respond creatively to the ideas and problems which followed Western penetration in the nineteenth century.” (Cleverley, 1991, pp. 20-21). A Qing scholar statesman named Zhang Zhongli criticized the system for “the constant drilling in traditional Confucian moral principles and the writing of

formalised essays which kept the mind of the gentry so occupied that they had little time for independent thought and study” (cited in Cleverley, 1991, p. 21).

Because the imperial examination system focused on testing the memorization of Confucian knowledge, education at that time was dominated by the study of Confucian philosophy. Schools from the lower to higher levels mainly taught Confucian Classics and served as a preparation for the imperial examination system.

The imperial examination system was also criticized for other reasons. First, there was gender inequality. Only men could sit for the exam and women were excluded. In the Confucian tradition women were regarded as inferior to men. They were expected to stay at home and look after their husbands and children. They could not participate in any political affairs. Second, the administration of the exam “was marred by cheating” (Cleverley, 1991, p. 20). Some examiners and supervisors accepted bribery from those candidates who had a strong family background either in power or wealth, which left those from poor families unlikely to succeed however hard they had worked on the exam. Third, the competition in the exam was vigorous and life-consuming. The exams at different levels were held every three years and only a small percentage of those who sat for the examinations could pass them and receive titles. Without any limit on age, many candidates spent their whole life studying Confucian Classics with the hope of eventual success on a subsequent examination. Unfortunately, only a small percentage could succeed and many ended with a sense of failure and feelings of shame (Cleverley, 1991).

Due to all the problems and deficiencies of the exam itself and later the invasion of foreign military powers in the nineteenth century, the imperial examination system finally came to an end in 1905 after thirteen hundred years of history (605-1905). However, “the validity of the idea of a national public examination persisted” (Cleverley, 1991, p. 21). The very idea of seeking able men to fulfill different positions in the society through education and examination remains valid until today. When we look at the current education system in China later, it will not be difficult to find the influence of the imperial examination system on today’s Chinese education.

With the termination of the imperial examination system, Confucian philosophy finally lost its pervasive popularity. But its influence on Chinese education was huge. “The very democratic nature of Chinese education - i.e., that it offered a path of upward mobility to anyone who could survive the rigors of study and examinations - was established from the first by Confucius himself” (“Confucianism and the Chinese scholastic system,” n.d.). Confucius was greatly concerned with individual cultivation and perfection, and social

stability and prosperity, which he believed, could be reached through education. His famous saying that “those who work with their heads will rule, while those who work with their hands will serve” reflected the great importance he attached to education (“Confucianism and the Chinese scholastic system,” n.d.). For Confucius, there was a clear distinction between headwork and handiwork. Due to the nature of Confucian philosophy that aimed at building a moral society, learning for Confucius mainly concerned about memorizing and acting on moral rules. Handiwork, for him, had nothing to do with *ren*, *li* and *junzi*. His idea of *junzi* was very much related to a person who was well-educated and embodied *ren* and *li*. Confucius once blamed his student Fan Chi for learning husbandry and gardening as a petty man (*the Analects*, 14.3). While there has been a debate on whether Confucius looked down upon handiwork, he viewed headwork as superior and encouraged his students to study *ren* and *li* and work as government officials (Le, 2002).

Besides his influence on education, Confucius’ moral and ethical teaching has also penetrated into every family from cities to villages, and become part of the social norms ever since. His idea of obedience of the inferior to the superior is still well accepted today. For example, children are supposed to obey parents and students to teachers.

4. The Political, Social and Economic Background of Education in China since 1949

Education in China has always had a close connection with the political, social and economic structures of society (Berci, He, & Tao, n.d.). Since the founding of the People’s Republic of China in 1949, Chinese society has undergone tremendous change in its socio-economic, political, and cultural realms and these are reflected in the educational system. In this section I will examine three significant educational events during different phases of China’s development, all of which contribute to an understanding of the educational system today: Mao Zedong’s educational reforms (the Great Leap Forward and the Cultural Revolution); the educational reforms which took place under the economic reform and open-door policy; and most recently, the reform of basic education from being exam-oriented to quality-oriented. My goal is to provide a critical review of these three major educational policies and their relationship to the changing political, social and economic milieu in China.

4.1 Mao’s Educational Reforms: The Great Leap Forward (1958-1960)

With the founding of the People’s Republic of China in 1949, Chairman Mao Zedong claimed that everything from the old feudal system must be destroyed, and education became a major focal point. Mao aimed to build “a new society” and “a new state” with “a new politics, a new

economy” and “a new culture” which included a new education (Chen, 1981, pp. 1-2). Illustrating the complex relationship between politics, economy and culture, Mao said, “Culture is the ideological reflection of the new politics and the new economy which it sets out to serve” (p.2). He believed that the new society needed new people to serve the new goal with “new loyalties and ideological outlook”. For Mao, this new goal was “revolution (socialism and communism) and development (modernization and nation building)” (p. 2). To bring forth such changes is “the task of education” and “education must serve politics, and the economy depends upon the indispensable support of education” (p.2). As for the changes to education, in *On the New Democracy* (Chen, 1981) Mao elaborated, stating that they consisted of “the struggles between the modern system and the imperial examination system, between the new learning and the old learning, and between Western learning and Chinese learning” (p. 2).

As Chen (1981) concludes, the main criticism that Mao made of conventional education was as follows:

- Academic education served the privileged few instead of the broad masses.
- It reflected the ideology and class society of the capitalist countries.
- It espoused education for its own sake, knowledge for its own sake, art and literature for their own sake, and thus produced apolitical intellectuals divorced from the toil and struggle of revolutionary society.
- Full-time study allowed students no time for labor, production, and participation in meaningful political activities.
- Preoccupation with mental or intellectual work alienated students from labor and the labouring people and created a chasm between mental and physical workers.
- Examinations and marks were used as artificial means of excluding those who did not subscribe to the scholastic concepts of knowledge divorced from reality.
- Schools isolated from society became ivory towers unconcerned with the social, economic, and political struggles of contemporary society.
- Students were motivated by selfish ambitions to seek knowledge for personal benefit, for fame, position, and status. (p. 121)

To transform the conventional education to a new kind of education that would be free from the above problems, reforms were needed. In 1958 the Communist Party launched the Great Leap Forward, a mass movement aimed at transforming China from a mainly agrarian economy into a combination of both agriculture and industry through mass production of steel. Educational reforms as part of the movement were used as “a strategy of mass mobilization for economic development” and social change (Pepper, 1991, p. 23).

As mentioned earlier, the twin goals for the new People’s Republic of China were national economic development from a long-time war-ravaged state and social and ideological transformation from feudal and bourgeois ideology. To achieve the former, “the nation

needed to create a vast contingent of qualified professionals”; and to achieve the latter, “the contingent had to consist of ‘proletarian intellectuals’” (Wang, 1991, p. 73). Mao intended to build a new education - revolutionary in conjunction with proletarian education, the aim of which was to produce “red-experts”. For Mao, “redness”, or political ideology, was more important than expertise or academic achievement. He denounced academic learning and book-knowledge without any immediate application in production and labour as useless and harmful. He claimed that “education must serve proletarian politics and be combined with productive labor” (cited in Wang, 1991, p. 73). On the one hand, this helped students to understand what was learned in classrooms, and on the other, connected the intellectuals with the labouring mass and prevented the growth of bourgeois elements and capitalism.

During the Great Leap Forward, many changes were made to education to meet the educational model that Mao favored: education was directed toward the masses; mental and manual labor were united; theory and practice integrated; and proletarian and revolutionary goal was emphasized. To build an educational model with these characteristics, Mao brought forth the idea of “work-study schools”, which he believed to be a perfect answer to universalizing education for the masses and engaging students in productive labor and realizing his ideal of proletarian education.

As a result, many schools were built up overnight with half work/half study programs. Without enough qualified teachers and administrators, it was proclaimed that “all work units could run schools and all able people teach” (Cleverley, 1991, p. 144). Administrators were drawn from local party members, most of whom did not have any previous administrative experience. Teachers had only elementary or secondary schooling, and teaching was limited to teaching Chinese characters. More emphasis was put on political study and productive labor. “Younger pupils and their teachers swept neighbourhood streets, weeded gardens, packed and graded rice and collected firewood, and older ones laboured in factories and fields” (p. 144). “Curriculum content and textbooks were geared toward local needs. Many theoretical or foundational courses disappeared from the curriculum” (Wang, 1991, p. 80). School years were shortened from twelve to ten years. Teaching and learning took place without any proper standards being observed.

The same was true of higher education. The number of part-time higher institutions increased dramatically, which was to respond to “the Education Act of 1958 to popularize higher education in 15 years so that all the youth and adults throughout the country who desired and had the basic qualifications would have the opportunity of studying in institutions of higher education” (Chen, 1981, p. 75). However, with the mushrooming growth in spare-

time universities and colleges, the teaching personnel were far less than was needed. What made it worse from the point of academic learning was that the teachers were not chosen for their academic qualifications but for their political status and class origin. And so were the students. Those from families of workers, peasants, or soldiers were deemed to be the most virtuous. Without any academic criteria, many students had only elementary education. Different from four-year full-time universities, the spare-time institutions of higher learning offered two-to-three years of part-time programs without any planning or systematic curriculum. Political study and productive labor dominated. The administration in the spare-time universities was party controlled and the administrators were chosen from those who were politically committed to the Chinese Communist Party without any consideration of their educational and administrative background. As a result, most students graduated with the academic level equivalent to secondary education.

The Great Leap Forward, with its accelerated tempo to transform China from an agrarian economy into a modern industrialized communist society failed, resulting in “the widespread waste of resources and a decline in agriculture and the general economy” (Wang, 1991, p. 81). Education reforms, as part of the movement, also ended, with criticism mainly from the professional intellectuals and some party members as well. They attributed the failure of the movement to the following reasons: the changes had no aims; quantity totally replaced quality; the pace of growth was too fast; and too much power was allocated to the local government. As for education reforms, besides the above problems, there were the following specific criticisms: too much labor and too few classes resulted in lower academic achievement; political study was the centre of the school curriculum; qualified intellectuals were not given due trust and were suspected of being infected with bourgeois values; there were no academic standards, and chaos prevailed (Cleverley, 1991, pp. 148-149).

However, despite all the criticism of the poor quality of education, it should be mentioned that the Great Leap Forward also resulted in some improvement in education and brought some fresh ideas into education. With more schools, colleges and universities being built, there were more students enrolled from lower to higher levels and education was diversified by offering different programs. This meant that full-time regular schools maintained high quality academic education, while half work/half study schools promoted mass education through self-support and self-supply in conditions of insufficient government funding, and spare-time schools extended education to the laboring masses. To some extent, the work/study and spare-time education served a definite purpose for adult education and vocational training. It made a significant contribution by providing an alternative for educational

advancement for those who were unable to take advantage of regular full-time education (Chen, 1981, p. 74). The work/study school embodied a combination of mental and manual labor. It was an attack on the traditional Confucian teaching that people who work with their heads are superior to those who labor with hands, and at the same time it reflected the concept of integrating theory with practice in education.

4.2 Mao's Educational Reforms: The Cultural Revolution (1966-1976)

Although the Great Leap Forward failed to create a 'new China' with a modern industrialized economy and a fresh socialist culture, Mao did not give up. He launched the well-known Cultural Revolution (1966-1976), a more radical process of breaking away from the past. The Cultural Revolution was a campaign to prevent the growth of capitalism in China through revolutionary class struggle. The justification, as stated in the *Sixteen Points*, was that "although the bourgeoisie has been overthrown, it is still trying to use the old ideas, culture, customs, and habits of the exploiting classes to corrupt the masses, capture their minds, and endeavor to stage a comeback" ("Cultural Revolution," from Wikipedia, the Free Encyclopedia, 2007). Therefore, it was extremely urgent for the masses to struggle against and crush the bourgeoisie and other exploiting classes with new proletarian ideas, culture, customs, and habits "to transform education, literature and art, and all other parts of the superstructure that do not correspond to the socialist economic base, so as to facilitate the consolidation and development of the socialist system" ("Cultural Revolution," from Wikipedia, the Free Encyclopedia, 2007).

Education, which Mao believed to have a considerable impact on social and economic development, became the first target of attack and was used as a tool for socio-economic transformation. Mao declared that education should be revolutionized. With many enthusiastic youths responding to Mao's call, the Cultural Revolution began on university campuses. Cleverley states (1991), students interpreted Mao's directive of 7 May 1966 on their role, "which became the principal justification of campaigning out of school" (p. 165).

While their main task is to study, students should also learn other things. That is to say, in addition to their studies they should also learn industrial work, farming and military affairs, and take part in the struggles of the Cultural Revolution to criticize the bourgeoisie as these struggles occur. (Cleverley, 1991, p. 165)

At the beginning of the Revolution, all schools were shut down, and after two to three years the primary and secondary schools were re-opened again, but it took longer for higher educational institutions to follow suit. For four years from 1966 to 1969 all the colleges and

universities were totally shut down. Even after education was resumed, students, encouraged by Mao's slogan of "the whole society educates", came out to farms and factories "to learn by actual participation in the processes of production and economic life and to become a part of the social and political struggles in their natural setting" (Chen, 1981, p. 94). School teachers and administrators were condemned as "bourgeois intellectuals", and came under constant criticism and political humiliation, and many were tortured and persecuted. Schools, as directed by the *Sixteen Points*, "came under the control of the revolutionary students, with some representatives of revolutionary teachers, administrative staff and workers" (Cleverley, 1991, p. 165). "Decisions about education per se moved from the control of the Ministry of Education intellectuals to various subcommittees of the Communist Party Central Committee made up of local workers, soldiers, peasants and politically correct teachers" (Berci et al., n.d.). The Confucian classics was totally abandoned and Mao's words and thoughts became the centre of the school curriculum. School courses were either watered-down or non-existent. The evaluation of students and teaching staff was based on their political commitment and class origin. The examination system was abolished so that those from families of farmers, workers and soldiers could enjoy the privilege of schooling. The idea of different forms of schooling playing different roles introduced during the Great Leap Forward was abandoned and all schools came under one title - "revolution". In effect, during the Cultural Revolution, students and teachers were so immersed in productive labor and political study that no actual teaching and learning took place (Chen, 1981). With politics being the center of education, youths and adults either lost their interest for study, or saved themselves from any academic study for the sake of political safety. Education thus became political and ideological indoctrination and schools became a revolutionary ground for class struggles. "In effect, the reforms of the Cultural Revolution brought about the 'de-schooling' of the society by destroying the whole structure of the education system" (Berci et al., n.d.).

While the Cultural Revolution devastated Chinese education, "Mao's criticisms of conventional education were often valid and were acceptable to more people than the remedies he prescribed" (Chen, 1981, p. 121). Mao touched on many educational problems that existed at the time and some of them still remain unsolved today. The following issues are still alive today.

First, the inequality between rural and urban education. As a result of the difference in income between rural and urban areas, education inequality has always been a big problem in China. In cities, students enjoy better facilities such as better classrooms, libraries, playgrounds, and so on. More importantly, more teachers choose to teach in towns and cities,

although a larger population is located in villages. According to a survey in 2000, for every 100,000 people, the number of people with senior secondary and higher education in cities and towns are 4 and 18 times greater than those in villages, respectively (Lei, 2004).

Second, the availability of elitist education instead of mass education. Although the nine-year compulsory education policy has been carried out since 1986, senior secondary and higher education are still accessible to only a few people. In 2007, the number of graduates from higher educational institutions accounted for only 5% of the whole population (Li & Wu, 2007).

Third, the relationship between theoretical and practical learning (Wu, 2004). Learning and teaching in schools take place mainly in classrooms. Lectures dominate most of the class period. Both teachers and students focus on exams and learning is so abstract that students do not see the relationship between what they study and their everyday lives.

Fourth, the sole criterion of a unified examination system. Students' promotion to higher levels depends exclusively on their results in the final unified examinations (Ye, 2004). Fifth, students' pursuit of education for their own personal benefit (Fan, 2004). Whether at home or at school, students are pushed to climb the ladder of education by surviving a series of competitive tests. When I was young, our teacher always reminded us that there was fierce competition in the world and education was the only means to make us succeed and live a good life. The meaning of "succeed" that parents and teachers pass on to children is simply to go to "university" and get "a good job", which means earning "good money" in their later life. The idea of the public good is seldom introduced and explained to students, who do not consider its importance to their lives.

During the Cultural Revolution, many economic activities were interrupted, causing an devastating impact on the Chinese economy. The Cultural Revolution was not aimed at reforming education as such. With politics at the core of the campaign, educational reforms were carried out to serve the overriding political goal of revolution, and they resulted in profound failure. Finally, in 1976 after ten years of turmoil, the Cultural Revolution came to an end with Mao's death, leaving the whole nation in poverty and the schooling of an entire generation either interrupted or a total blank. Since the previously established educational system was completely destroyed, China was faced with an unprecedented challenge: should it go on following the direction instigated by Mao or should it go in a new direction? If the latter, where should it go?

4.3 Educational Reform under the Policy of Economic Reform and Open-Door (1977-present)

After Mao's death, political power gradually acceded to Deng Xiaoping, who was known as the originator and leader of the economic reform and open-door policy. In 1978, the Central Committee of the Communist Party of China held an historic meeting at which two important decisions were made: One was to adopt the open-door policy to other countries, and the other to transform the Chinese economy from a planned economy to a socialist market economy. The goal of this economic reform was to save China from poverty caused by the Great Leap Forward and the Cultural Revolution, and to achieve national modernization in the long run. The decisive factor in this reform, Deng pointed out, was science and technology. Deng asserted in 1978 at the National Conference on Education that "science, and therefore education, was an economically 'productive force'" (Zhou, 1988, p. 12). The logic was such that "the shift toward a socialist market economy necessitated not only an adequately trained work force to support economic development, but a highly educated one". Education thus "was deemed to be a major factor in the advancement of economic modernization" and "science and technology became an important focus of educational policy" (Berci et al., n.d.).

With the national goal shifting its emphasis from politics to the economy, the implication for education was to swing back to its academic model from the revolutionary model favored by Mao during the Cultural Revolution (Chen, 1981). The first and most pressing problem in education, Deng pointed out, was to improve the academic quality of education, especially higher education. Commenting on academic study, productive labor and political study, he said productive labor and political study were important, but students' main task was to stay at school, where they should focus on academic study, in particular, the study of science and technology. Examinations, which were eliminated for a few years during the Cultural Revolution, were now deemed necessary and important at the National Education Work Conference in 1978. "Examinations are an indispensable part of the educative process; they are 'an important method of checking on studies and on the efficacy of teaching'" (Chen, 1981, p. 157). At the National Science Conference in 1978, it was stated that science and technology were basic to national modernization, and intellectuals were working people with the only difference that they worked mainly with their heads. It was recognized that both mental and manual labor contributed to nation building. To achieve the Four Modernizations, namely, agriculture, industry, science and technology, and national defence, education was to play the central role because a number of intellectuals would be needed in various fields to meet the high demand for economic development (Chen, 1981, p. 160). This was why Deng

made the statement, “The key to modernization lies in science and technology and the key to these lies in education” (Pepper, 1991, p. 29). Thus the status of intellectuals changed and their position in national modernization elevated.

To translate the new educational proposals into practice, a number of significant changes were made (Pepper, 1991). One history-making event was the restoration of the examination system. In late 1977, Deng officially reinstated the traditional examinations based on academics, and the National College Entrance Examination has continued until today. Without any examinations during the Cultural Revolution, a lot of problems emerged (Pepper, 1991). Education had no academic standards and corruption had spread on the basis of personal interpretations of Mao’s words at local levels. Mao set political status and class origin as the major criteria for assessing students and teachers. This gave local governments the right to recommend whoever they preferred because the definition of political status and class origin was flexible and subjective. In contrast, there had been a two thousand year old tradition during which the government sought able men through the examination system, which was widely recognized as an effective means to prevent corruption and uphold educational justice.

To facilitate economic reform requiring high levels of scientific and technological development, the new government explained that the quality of education had to take precedence over its quantity, since China could not “afford the the luxury of promoting both simultaneously” (Pepper, 1991, p. 29). As a result, total enrollments were greatly cut back from elementary to senior secondary schools. The cutbacks were most severe at the senior secondary level. The rationale was that senior secondary level education served mainly as “a college-preparatory exercise”, and since only a few students could go on to higher education through attending the college entrance examination, there was no necessity to make senior secondary school universal (p. 30). The approach taken during the Cultural Revolution to promote social equalization was discarded and an elite approach was adopted to allocate individuals to different positions needed in the development of the national economy.

Another change to senior secondary level education was the diversification in structure (Chen, 1981). Besides regular senior secondary schools, there were vocational and technical schools to produce middle-level technical personnel in three to four years. With the encouragement of the economic reform, many enterprises were built up in the 1980s, which met the high demand for employment of graduates from vocational and technical schools. Therefore, many students chose to go to vocational and technical schools for the privilege of enjoying “job security” (*baofenpei*) upon graduation.

Those who went to regular senior secondary schools enjoyed the privilege of going to colleges or universities by taking the college entrance examination. However, the disadvantage was that the competition was intense and many ended up failing. If anyone was lucky enough to survive the exam, the rewards were huge. His/her name would be passed from one family to another in the community as an example to learn from; his/her name would be posted on the school wall; and of course, most important of all, s/he would be able to enjoy priority in both social status and salary after four or five years of higher education.

From the early 1980s until the mid-1990s, vocational and technical schools produced a large number of skilled workers to meet the rising needs of the nation's expanding economy (Chen, 1981). To some extent, these schools reduced the competition for regular senior secondary students to enter higher education. As a percentage of total enrollment in senior secondary education, vocational and technical education increased from 18% in 1980 to 56% in 1997 (Tsang, 2000, p. 11). However, compared with some Western countries, the Chinese economy was still backward and so was its education with regard to the quantity and quality of higher education. Looking back to the economic return that had been achieved since the socialist market economy was introduced and the development of science and technology was given priority, the Chinese government strongly believed that there was a close link between educational and economic development. Therefore, in 1999 a new educational plan for "the expansion of higher education" (*daxuekuozhao*) was initiated to stimulate the national economy "as higher education can improve labor skills and productivity" (Su, Wu, & Yao, 2008, p. 5). Chinese higher education now entered a new stage of development, namely expansion through marketization.

4.4 Higher Education Reform: Expansion through Marketization (1999-present)

Without any doubt, the new policy enabled more senior secondary students to realize their dream of university and produced more high academic professionals for national modernization. For example, in 1999, there was an increase of 460,000 places in regular higher education compared with 1998, giving a total number of 1,540,000 places. The increase was as high as 42.6%. Within the seven years from 1999 to 2006, expansion continued at about 500,000 each year ("Who benefits most from higher education expansion," 2006). However promising as it appeared from the quantitative aspect, given the economic conditions and educational resources of China at the time, the sudden expansion of higher education has brought more problems than benefits.

If we look at the theory that drove the expansion, it is not difficult to understand why the expansion is more problematic than beneficial (Min, 2001). In the late 1990s and early 2000s, deflation was a big problem in China. Knowing that there was a long tradition of Chinese parents saving every cent of their earnings for their children's future education, some economists pointed out that by expanding student enrollment a large amount of accumulated savings could be brought into higher educational institutions. This would, they argued, stimulate national consumption and, in turn, provide a boost to the growth of the GDP and contribute to the economic development of the whole nation. It was in this economic context that the expansion of higher education was initiated. The expansion happened not as a result of deliberate educational planning, but as a strategy to stimulate the demand of domestic consumption. Education was thus redefined as "consumption".

The expansion necessitated more funding. Naturally students and their families, as consumers, became the main source of such funding, taking one of two forms: an increase in tuition and other fees, the offering of short-term programs for self-paying students. Tuition for higher educational institutions was first introduced in 1995 at about an average of 800RMB per student (about \$115 Cdn at the exchange rate of 7:1) and has grown higher and higher since then. From 1997 to 2004, the average tuition level increased from about 1,500 RMB (about \$200 Cdn) to 5,500 RMB (about \$785 Cdn). However, in 2004 the average per capita incomes in urban and rural areas were 9,422 RMB and 2,936 RMB, respectively,. This meant that to support one undergraduate in a public higher institution needed 4.2 years of an urban family's net income and 13.6 years of a rural family's (Li, 2007). Besides, there were some other actual expenses such as accomodation and medical expenses. Therefore, large tuition fees have made higher education inaccessible to many students, especially those from poor families in rural areas, resulting in educational inequality between the rich and the poor, and between urban and rural areas.

Besides the dependence on tuition, the individual institution sets up the Training Department (*peixunbu*) which helps to solve the financial problems of expansion (Yuan, n.d.). The Training Department offers two to three years of short-term programs to students who fail the college entrance exam. They are called "self-paying students" (*zifeisheng*) because they pay much higher tuition. The Training Department does not have their own faculty, but their programs are given by faculty members in other departments of the institution. In return, the Training Department pays both the faculty members and the institution. Without extra money for its teaching staff, the Training Department makes considerable profits for each

institution. However, with the extra teaching load for faculty members and the greater ratio of students to faculty members, the quality of education is undermined.

Along with the expansion of public higher institutions, many private institutions have been built up (Yuan, n.d.). While they are financially independent from the state, they depend on money borrowed from banks and on high tuition fees. Private institutions have lower admission requirements than the public ones and enjoy less credibility and become many students' backup choice. However, with high tuition, they have banned many poor students from entering their doors and become the privilege of the rich. It is fair to say that the expansion divides students into two groups: the rich and the poor. The former benefits from it and the latter becomes its victim. Higher education in China thus becomes a product to be consumed based on students' ability to pay.

Another serious problem with the expansion is the more vigorous competition it has emphasized for senior secondary students to enter higher education institutions and for higher education graduates to find jobs (Su, et al., 2008). It seems ironical that the expansion, which is supposed to relieve the competition for regular senior secondary students to enter higher education institutions, makes the competition more intense than ever. To understand this, we have to look at two other problems, namely, under-employment from the expansion, and the superficial transformation of vocational and technical education caused by under-employment.

With the rapid growth in higher education graduates, employment becomes a big issue (Su, et al., 2008). There are more higher education graduates than employment opportunities offered in the labor market, which results in some of them being unemployed. When supply increases faster than demand, academic qualifications become the key to employment, which causes two social phenomena: first, senior secondary students compete for places in key universities in order to avoid unemployment after graduation; second, higher education graduates crowd into master's or doctoral studies to be better qualified for the competition for jobs. As a result, the whole society blindly enters into a pursuit of higher degrees at key universities, such as Tsinghua University, Peking University, Zhejiang University and so on. The competition to enter higher education before the expansion has now become the competition to enter key universities, which makes the latter even more intense (Ye, 2005).

The other factor that contributes to increased competition for regular senior secondary students is the transformation of vocational and technical schools. Due to the problem of under-employment and the emphasis on degrees in the labor market, "job security" is no longer a privilege for vocational and technical school graduates. They have been faced with inadequate employment opportunities, and become the most vulnerable in the labor market.

To respond to this problem and improve their competitive power, vocational and technical schools have been transformed into vocational and technical colleges under the name of public higher education institutions, called “mother institutions” (*muxiao*). Upon graduation, instead of a vocational and technical certificate, students are awarded a postsecondary educational diploma with the name of the mother institution to better qualify them in the labor market. However, the transformation is only a change in name. Because of the intervention of the mother institution, the distinction between vocational and technical higher education and regular higher education has become blurred. Unfortunately, with the blind pursuit of academic qualifications and higher degrees, vocational education has lost its direction and consequently lost its previous popularity. It now serves only as a backup choice for most senior secondary students, and this has resulted in regular senior secondary education and regular higher education becoming the mainstream in education.

In sum, the impact of the expansion of higher education is huge. On the positive side, it produces more and more higher education graduates. However, the problems are overwhelming: the educational inequity issue between the poor and the rich, the quality of education, under-employment, competition among individual students and educational institutions, more intense competition in the college entrance examination, the blind pursuit of academic degrees, and the superficial transformation of vocational and technical education.

Since the adoption of the socialist market economy and open-door policy in the late 1970s, education has gained a strategic position in national economic development and modernization. This emphasis on education “has provided opportunities for and impetus to the reform and development of education and put forward new and higher requirements for education” (State Education Commission of the People’s Republic of China, 1996, p. 5). In the late 1990s, with the introduction of the expansion of higher education, education in China was placed firmly under market forces. The very concept of competition in the market has penetrated the entire educational system and is best reflected in the college entrance examination and the labor market. Moreover,

the emergence of private educational institutions, the shift of state responsibility in educational provision to families and individuals, the prominence of fee-charging, as well as the introduction of internal competition among educational institutions, clearly suggest that China’s education has been going through a process of marketization. (Mok, 2000, p. 1)

4.5 Quality-oriented Education (1999-present)

In the late 1980s, the whole world realized that knowledge, science and technology were becoming the focus of global competition, and accordingly the importance of education was further elevated. The term “knowledge economy” has been widely used ever since then in both the academic and business worlds. However, as Rikowski (2003) argued, the definition or meaning of “knowledge economy” is always ambiguous and controversial. Quite often it is used interchangeably with “knowledge, information, knowledge management, information management” and so on (p.165). To distinguish these different terms, Rikowski pointed out that the concept of value is important, since the meaning of “knowledge economy” can be very different according to different values people hold. However, because economic competition dominates the whole world, the “knowledge economy” is frequently defined as the use of information and technologies to produce economic profits.

To respond to the international competition of the “knowledge economy”, the Chinese government made the following statement in *Decisions on the Reform and Development of Basic Education*:

With the rapid development of science and technology and the expansion of the knowledge economy, international competition is becoming more and more fierce. We must realize that education plays a foundational role in building national power because national power depends on the quality and quantity of its people. Despite the great success we have obtained in education in the past fifty years since 1949, there are still problems with our education, which have had negative influence on the all-around development of our children and youth. Education thus fails to meet the needs of improving the whole nation’s civic comprehensive qualities. Those problems are reflected in our educational concepts, educational system, educational structure, educational content and educational methodology. Therefore, we need to further educational reform and fully propel quality-oriented education so as to make a solid intellectual and knowledge foundation for our strategy of prospering our nation through science and technology. (CCCPC & the State Council, 1999)

According to the document, quality-oriented education is defined as an integration of ethical education, intellectual education, physical education and aesthetic education, the emphasis of which is on students’ moral and intellectual development, physical health, and appreciation of beauty and creativity, respectively. Instead of focusing solely on children’s intellectual development as in exam-oriented education, the policy considers students as physical, intellectual, psychological and emotional beings and, at the same time, it recognizes

individual differences among students. This educational model considers students to be at the center of education, and aims at

cultivating students' curiosity and desire for knowledge; making students active participants in the learning process; developing students' sense of inquiry and investigative strategies; encouraging communication and co-operation; giving students opportunities for hands-on experience and relating the curriculum to students' everyday lives. (Primary Mathematics Report, cited in Dello-Iacovo, 2008, p.3)

Teaching and learning are based on students' physical and psychological health, and education is to be sustainable and directed towards their future development. The ultimate goal is to improve their overall civic comprehensive qualities by cultivating students' all-around abilities, especially creativity and practical problem-solving ability

With the issue of this document in 1999, quality-oriented education has become a slogan in the educational world in China. The traditional "exam-oriented" education, which is considered as a totally different, or even a contradictory, educational model, thus encounters its greatest criticism. Educational reform replacing exams with quality-oriented education has become a major Chinese innovation in the 21st century.

According to Liu (2001), there are three main differences between exam-oriented and quality-oriented education. First, their purposes are different. The former aims at improving students' test writing skills, while the latter develops students all-around abilities so as to better prepare them for their future life. Second, the teachers' function is different. In the exam-oriented educational model, teachers select those students that are likely to succeed in the exams and focus on them. In the quality-oriented educational model, teachers are more like gardeners whose task is to nurture all the students and help them to grow. In actuality, when I was a little girl there was a folk song which said teachers are gardeners. President Deng Xiaoping also made the comment that teachers are gardeners whose task is to nurture the younger generation (Lu, 2004). Third, the function of exams is different. In the former, examinations are the purpose of education rather than a means of educational evaluation, while in the latter it is a means to assess students' progress and educational effectiveness.

It has been ten years since quality-oriented education was initiated. However, Ye Lan (2005), the Vice Chairman of the Chinese Education Association, has stated that the results of the reform are not promising. Education is still oriented towards college entrance examination; schools focus on how to improve their students' promotion percentage; students pursue not simply higher education, but entry to key universities; and parents expect their children to get

high marks in each single exam. These all constitute obstacles to the implementation of quality-oriented education.

To further analyze the problems in the implementation of quality-oriented education, Liu (2005) made the following deep insights. First, there are misunderstandings and confusions about the essence of quality-oriented education in schools. Many schools simplify quality-oriented education to adding a few more classes in music, physical education and arts. Another misunderstanding is that exams are viewed as an absolute enemy to quality-oriented education. School administrators and teachers complain that as long as exams still exist, quality-oriented education is impossible. Xian (2005) warned that viewing exams as a contradiction can only lead to a weakening of quality-oriented education. Besides, the problem with exam-oriented education is its overemphasis on exams and the unreasonable nature of the examination system, not the exam itself. He argues that as an important means of evaluation, exams can provide a fair and just competitive educational environment. It must be made clear that the goal of quality-oriented education is to reform the examination system, not to abolish exams.

Second, there is a lack of research in teaching approaches used in quality-oriented education. Although there has been a major reform in curriculum, with new textbooks introduced to liberate students from the burden of heavy memorization and repetition, without any systematic research on quality-oriented education, teachers are still using the traditional “spoon-feeding” teaching method in their teaching practice.

Third, the evaluation system is still deeply rooted in examinations. Students are evaluated on the basis of their marks in exams; teachers are evaluated through the overall performance of their students in exams by school administrators; and school administrators are evaluated through the promotion percentage of their schools by local governments. As a result, students, teachers, and school administrators all have to focus on exams.

Fourth, quality-oriented education necessitates changes in teachers, not only in their thinking habits and teaching methodology but in their philosophy of education. However, with the blind pursuit of high marks in exams, there is no room for teachers to adjust themselves to the new philosophical approach required by quality-oriented education.

As a result, quality-oriented education still suffers. The over-emphasis on exams in educational practice constitutes the main obstacle to its implementation because education still focuses on students’ success in exams at the expense of their all-round development. While the college entrance exam remains the only means of evaluation for admission to higher education, the shift from exam-oriented education to quality-oriented education is

unlikely to happen, because schools cannot afford to lose out in the number of students who succeed in exams. Nor can the students or their parents (Liu, 2005; Ye, 2005).

5. The Current Education System in China

According to the Ministry of Education (MOE), education in China falls into three categories: basic, higher, and technical and vocational education. This formal categorization is familiar to the Chinese populace.

Basic education

Basic education in China includes pre-school education, elementary education and regular secondary education (MOE).

Pre-school education takes many forms, some in childcare, and some in kindergarten, some full time, and some part time. It varies considerably from urban to rural areas. In cities, pre-school education gains a lot of attention and children learn what they will be taught in grade one of elementary school, therefore it is regarded as a very important step to elementary education. In rural areas pre-schools are like child-care centres offering day care services so that parents can leave their children there and do farm work. In some remote areas, there is no pre-school at all and children go directly to elementary school.

Elementary education lasts either five or six years depending on different local educational policies. Children reaching the age of seven can attend elementary school. The courses available in elementary schools include Chinese, Mathematics, English, Physical Education, Music, Art, and elementary instruction in nature, morals and society, but they differ from one area to another. In many remote and poor villages, there are only two courses - Chinese and mathematics - because there are no teachers in other subjects, while in big cities all the courses are available with Chinese and mathematics being the core ones.

Students in elementary schools have to take two exams set by their teachers each semester: mid-terms and finals, and at grade five or six before going on to secondary education, they will experience their first big exam set by the local educational department. It is claimed that all children have equal rights to nine years of compulsory education, but often they are assigned to different schools and classes according to their performance in the last big exam. Students who have gained high marks are able to go to key schools or key classes where better facilities and teachers are allocated, which means that they will have a better chance of going to senior secondary school and then to university. The five or six years of elementary education revolve mainly around this last big exam which has a significant effect on students' chance of going to university.

Regular secondary education consists of two periods: junior high education and senior secondary education. The former takes three or four years (depending on how many years are taken for elementary education, five or six) to complete, and the latter three years. The nine-year Compulsory Education Law, which took effect in 1986, guarantees the right of all children to enjoy nine years of education (five or six years of elementary education and three or four years of junior high education), which makes junior high education accessible for all graduates from elementary schools. However, those graduates from junior high schools seeking to continue their education in senior secondary schools have to pass the locally organized entrance examination before admission. Although students write both middle and final exams each semester during their junior high education, it is the final entrance exam that decides whether or not they reach senior secondary school.

The importance of the Senior Secondary Entrance Exam (known as *zhongkao*) lies not only in deciding whether or not a student can go to senior secondary school, but also whether or not s/he can be assigned to a key school or a key class. Enjoying the privilege of better facilities and teachers and attracting more money from local government, students in key schools or key classes are much more likely to succeed in their next big exam, the College Entrance Exam (known as *gaokao*). For this reason, junior high education is largely dominated by the Senior Secondary Entrance Exam, and teaching and learning is mainly directed at obtaining a high score in the exam.

Once a student gets into senior secondary school, three years of intensive study awaits her. At graduation she will face the most important exam, the College entrance exam. The exam used to be uniform across the country. In 2000 Beijing and Shanghai began to set their own college entrance exam, and later more provinces and municipalities were allowed to hold their own. By 2006 there was a total of sixteen provinces and municipalities administering their own college entrance exam. As this exam adopts an elimination system, students have to work very hard to compete with each other. Once again it is this one last entrance exam that decides whether a student is eligible for higher education without taking into account students' academic performance during their three years of senior secondary education. Although the promotion percentage for senior secondary students to higher education has been increasing with the rise of many private higher educational institutions, the competition is still quite vigorous because students are trying to crowd into key universities for the sake of finding a job after graduation.

Higher education

After completing three years of senior secondary education and passing the college entrance exam, a student can finally attend higher education. Higher education at the undergraduate level includes two-year and three-year junior colleges, four-year colleges and universities. Many colleges and universities offer graduate programs, leading to Master's or Ph.D. degrees. Some colleges and universities also offer programs for adult and continuing education, which either lead to a degree, a graduation diploma or a certificate.

Higher education institutions in China can be categorized into three levels: key universities, regular universities and colleges, and private colleges. It is the score attained in the college entrance exam that decides which level of institution a student is eligible for and what program she can take. Although the admission rate to higher education has increased from 47.13% in 1996 to 70.14% in 2006 (China Education and Research Network, n.d.), student pressure is not alleviated because schools and parents expect them not only to pass the cut-off line for admission, but to go to key universities and take the most popular programs, such as computer programming, business management, biological science, food science, and so on. Therefore, the competition between schools and in schools is no less vigorous.

Once a student gets into college or university, life will be much easier because s/he does not have to face another big exam. To get a diploma or degree from a higher educational institution, a student has to finish all the courses required and pass the final exam for each course. Having had several years of experience in writing exams, most students do not have any problems and are awarded a degree or diploma upon graduation.

Vocational education

Vocational education in China is provided at two levels: vocational secondary education and vocational and technical higher education. Vocational secondary level mainly refers to vocational education at the senior secondary school stage and enrolls students graduating from nine-year compulsory education. It is composed of specialized secondary schools, skilled workers' schools and vocational secondary high schools. Specialized secondary schools mainly prepare cadres for various specialized areas, and skilled workers' schools aim at training skilled workers with a specialization, such as electricians, welders, mechanics and so on. Vocational secondary high school students are similar to regular senior secondary school students, but they learn less about basic knowledge and more about a specialized area at the introductory level, and they can only write the college entrance exam for vocational and technical higher education, which plays the same role as the college entrance exam taken by regular senior secondary school students in admission to higher education.

With schooling lasting two to four years, vocational and technical higher education mainly enrolls graduates from regular senior secondary schools and vocational secondary high schools. Those who have two and three years of schooling are rewarded a higher education diploma upon graduation and those who have four years of schooling receive both a diploma and a Bachelor's degree.

Although it is claimed that vocational education aims at training introductory, secondary and high-level specialized technical and management talents needed in the economic construction, in reality it serves only as a second choice for most students. A survey about students' attitudes towards vocational education ("Survey about students' attitude towards vocational education," 2005) indicates that the reason why students do not choose vocational education as their first choice is complex and multi-faceted: society has a prejudice against vocational education; students' all-round quality is low; the government does not pay enough attention to vocational education; vocational education does not meet the high degree requirements of society; there is a lack of internship opportunities; and finally, it is not easy for a graduate from vocational education to find a job.

Commenting on the disadvantages of vocational education, Wang (2008) from Guangzhou Vocational Education Centre remarks that the problem with vocational education in China is that it has not established a systematic curriculum and is still deeply influenced by regular education. The students in vocational schools have too much to learn, which results in a weakness in their theoretical knowledge and practical skills. He argues that if vocational education is to play the role that it should, it must break away from the framework of regular education and emphasize its own characteristics. However, there is little attempt from either Wang or other teachers and educators to discuss how vocational education can find its own way by making internal changes. Instead, Tong (2006) pointed out that there were three external obstacles that prevented the proper development of vocational education: first, the transition from vocational schools to universities is invalid. Students cannot transfer academic credits from vocational schools to universities. If they wish to go to universities to further their education and get a Bachelor's degree, they have to go back to senior secondary schools and pass the college entrance examination; second, society views vocational school graduates as labourers, and university graduates as intellectuals, and this hierarchical distinction leads to the third obstacle, which is the huge difference in payment and benefits. He argued that these obstacles must be removed in order for vocational education to be functional.

5. Summary

The objective of this chapter was to introduce the education system in China. In order to help understand how the current educational system came into being, I have investigated the evolutionary changes of Chinese education in the context of its philosophical and historical and socio-political and socio-economic background.

The importance of education was traced back to Confucius, whose educational philosophy has had a huge influence on Chinese education. Confucius attached great importance to education. He viewed education not only as a means of self-cultivation and self-elevation, but as a vehicle to maintain a stable and harmonious society. Confucianism had a close relationship with the ancient imperial examination system. Confucian works used to be the main content of the exams, and therefore dominated the school curriculum. People in ancient China had to learn Confucian works and pass the exams if they wished to seek a government position. Confucius encouraged people to cultivate themselves through study because, for Confucius, people were born the same and what made them different in their later lives was education. This is reflected by his famous saying “those who work with their heads will rule, while those who work with their hands will serve”. There was a sharp distinction in Confucian philosophy between headwork and handiwork, which later encountered much criticism from Mao Zedong, who introduced educational reforms designed to overcome this dualism. Whitehead was also opposed to the idea of separating headwork from handiwork, as I shall show in chapter four.

Following the revolution in 1949, Mao used education as a tool for ideological reform. Mao criticized conventional education for its elitism, abstractness, its separation of theory from practice, its orientation towards exams and the selfishness it bred. However, by focusing on politics and not education per se, he failed to prescribe valid remedies to these problems and his educational reforms finally brought Chinese education into chaos.

Since the adoption of the socialist market economy and the open-door policy, the importance of education has been further elevated. To facilitate national economic modernization and to enhance the nation’s competitive power internationally, innovations were made to improve education from lower to higher levels. One was the expansion of higher education, and another the reform of basic education from exam-oriented education to quality-oriented education. The former was initiated to stimulate the Chinese economy by bringing the savings of individuals and families into higher education institutions and then to the society, and the latter was to improve overall civic qualities through basic education. The expansion of higher education is still in progress and many problems have emerged, one of which is the more intense competition it has caused in the national college entrance exam.

Quality-oriented education claims to develop students' all-round abilities instead of teaching them test writing skills. Ironically, with competition becoming more and more vigorous as a result of the expansion of higher education, the so-called "all-round development" has to give way to the college entrance exam in practice. As a result, quality-oriented education has become only a slogan.

Chinese education from ancient to present times has been characterized by its competitive examination system except during the Cultural Revolution when Mao tried to extend education to the masses. Two thousand years ago, the imperial examination system was used to recruit able men for government positions. Although the imperial examination system was abandoned thirteen hundred years later, the national examination system persists until today. It has been a tradition that Chinese people elevate their social and economic status, climbing the ladder of education by surviving a vigorous, competitive examination system. However, the door has been opened for a more student oriented form of education by the introduction of quality oriented education in 1999. And it is the possibilities for meaningful educational reform along Whiteheadian lines that I wish to explore in the rest of this thesis.

Chapter Three

Avoiding Inert Ideas Through the Rhythm of Education

1. Introduction

The previous chapter provided a detailed account of the history of education in China, analyzing its historical, philosophical, political and economic background. This analysis helps to understand the current major problem in Chinese education about which this thesis is concerned, namely the overemphasis on exams. The result of such education is that students work like exam machines, whose health, emotions, feelings, interests, ideas, hopes and desires are all deadened. In contrast, Whitehead (1967b) asserts that “the students are alive” (p. v), and education should aim at enabling students’ “self-development” (p. 1). Without the consideration of students’ concrete experience, education would not lead to growth, but to “dead knowledge” or “inert ideas” (p. v). This is exactly what happens in China as the only goal of education is students’ success in exams.

This chapter will examine Whitehead’s analysis of inert ideas, how they arise, and how they can be eliminated. This analysis will help explain the harm done by test-oriented education in China and provide guidance for Chinese educators to reorient their educational practice towards a student-oriented approach based on Whitehead’s educational philosophy.

2. Inert Ideas

Whitehead (1967b) believes that “the central problem of all education” is “the problem of keeping knowledge alive, of preventing it from becoming inert” (p. 5). Inert ideas are passively received by students without any genuine understanding of their importance or application in life. One typical example of inert ideas is to remember a long list of dates and places, or the names and times of the queens and kings in history for no reason other than to be prepared for an examination (p. 8). Such ideas are not only “useless”, but “harmful” (pp. 1-2) because they are “disconnected ideas, not illuminated with any spark of vitality”, leading to “mental dry rot” (p. 2). Therefore, Whitehead warns that educators must bear in mind that education is “dealing with human minds” (p.5), which are “delicate, receptive, responsive to stimulus” (p. 6), “not a box to be ruthlessly packed with alien ideas” (p. 30). Whatever ideas are imparted to a student, s/he “should make them his own, and should understand their

application here and now in the circumstances of his actual life” (p. 2). The reasons are simple: first, “pupils have got to be made to feel that they are studying something” through the application of theoretical ideas in their practical life; second, “the child should experience the joy of discovery” (p. 2) so that their interest in learning can be maintained and further stimulated. Otherwise, as Woodhouse (1995) remarks, the ideas “become lifeless or inert and intellectual pursuits boring, tedious, and irrelevant to many students” (p. 355). However, this is not to suggest that teachers should not pass any ideas on to their students. Rather, what Whitehead is criticizing is the mere transmission of ideas to students without relating them to their experience so that they become inert.

The harm done by inert ideas lies not only in themselves, but in their “fellow travelers”, namely “stagnation, barren precision, indiscriminating discipline, disconnected ideas, dullness and dryness” (Gunter, 2005, p.213). Education “represented by a book or a set of lectures which will practically enable the student to learn by heart all the questions likely to be asked at the next external examination” inevitably manufactures these products (Whitehead, 1967b, pp. 4-5). The reasons are as follows. Exams require all the students to remember a huge amount of fragmented pieces of information exactly as they are taught by their teachers or displayed in the textbooks, not allowing any room for individual questioning or interpretation. Students have to learn all the subjects without taking difference into account, because exams put equal weight on all parts of the curriculum (p. 10). Whitehead argues that educators must pay attention to “the intellectual type of the pupils, their prospects in life, the opportunities offered by the immediate surroundings of the school, and allied factors of this sort” (p. 5). What he is suggesting is that each student is a unique individual with unique interests, character and experience. Due to their uniqueness, their understanding of ideas is bound to be different from one another. The problem with exams is that they always require a standard answer, which “tend(s) to reduce the quality of students’ thinking” (Kohn, 1999, p. 2). Whitehead (1967b) criticizes the uniform emphasis on all subjects to all students because one student may be interested in, and good at, art, while another may prefer science. In his words, “mankind is naturally specialist” (p. 10). This is important because interest “makes all the difference” (p. 11). However, the indiscriminate discipline embedded in exams views all the students in the same way and does not recognize their difference and liveliness. It does not consider students’ interests, and to make things worse, it “tend(s) to reduce students’ interest in the learning itself” so that they come to view learning “as a chore” (Kohn, 1999, p.10). As a result, learning is dull, dry and boring, represented by a list of precise and disconnected ideas. Such education that “approaches the problem by the way of the enumeration of subjects

which every one ought to have mastered” is “hopeless” for Whitehead (1967b) simply because “there are too many of them” (p. 30). Therefore, he argues, ““Do not teach too many subjects’, and again, ‘What you teach, teach thoroughly’” (1967b, p. 2), because it is useless for a student to know bits of information on this subject and bits on that. The word “use” is important to Whitehead (1967b) for he believes that “education should be useful, whatever your aim in life” (p. 2).

The very notion of “usefulness” prompts Whitehead (1967b) to strongly protest against inert ideas. For him, the worth of education lies more in its use than in knowledge for its own sake, since it is “the way in which knowledge is held”, namely “wisdom” that is important. “It concerns the handling of knowledge, its selection for the determination of relevant issues, its employment to add value to our immediate experiences” (p. 30). Simply put, education is more than a process of imparting knowledge. Its essence is to teach students how to utilize knowledge in their real-life circumstances and deal with practical problems in a wise and intelligent way. There is an old saying which may help explain the idea of knowledge and its use: it is better to teach a man how to fish than to give him a fish. A man cannot live with one fish. But if he is taught how to fish, he will be able to feed himself. The same is true of knowledge. Knowledge alone is insufficient, but being able to utilize knowledge is essential to solve real-life problems. The difference is that with a fish, one may have a delicious meal, but with knowledge alone it is as though one has the fish, but does not know how to cook it, and so remains hungry. At the same time, Whitehead (1967b) does recognize the importance of knowledge as he says, “You can’t be wise without some base of knowledge”, but he warns that “you may easily acquire knowledge and remain bare of wisdom” (p. 30).

Having raised the problem of inert ideas, which is a major problem in schooling, especially in China today, Whitehead (1967b) does not leave us with a question mark. He analyzes the source of this problem from both theoretical and practical approaches. He sees the problem of inert ideas to arise mainly from “a false psychology” that views “pupils’ progress as a uniform steady advance undifferentiated by change of type or alteration in pace” (p. 17). Rather, he suggests that “life is essentially periodic” and pupils’ progress is “rhythmic” (p. 17), “passing through a threefold cycle of romance, precision and generalization” (Scarfe & Woodhouse, 2008, p. 168). It is important, say Scarfe & Woodhouse (2008), to realize that “the cycles can overlap with one another and are conjoined in a repetitive, or more accurately reiterative, process of growth that is lifelong” (p. 168). This view of a three-fold cycle concerns human beings’ natural mental development and constitutes a complete learning process. Whitehead claims that this rhythm of mental growth

must form the basis of education and be applied with due attention. If any cycle is absent, learning is considered incomplete. The problem of inert ideas is a result of an overemphasis on the cycle of precision and an almost total neglect of the other two in educational practice.

3. The Rhythmic Cycles of Learning

Intellectual development for Whitehead (1967b) is composed of three stages in a tripartite cycle, namely romance, precision and generalization. “In a general way the whole period of education is dominated by this three-fold rhythm” (pp. 37-38). The stage of romance is the “the stage of first apprehension, the transition from the bare facts to the first realizations of the import of their unexplored relationships” (p. 17); in the stage of precision the learner aims towards “exactness of formulation, which is the stage of grammar, the grammar of language and the grammar of science” (p. 18); and the stage of generalization is a stage of “synthesis” (p. 19), relating “abstract ideas to concrete facts in a joyful way” (Woodhouse, 1999, p. 193). Whitehead (1967b) believes “education should consist in a continual repetition of such cycles” (p.19), opposing “any view that conceives of the stages of learning as linear, sequential, and distinct...and the cycles as having no alteration in their pace” (Woodhouse, 1999, p. 193). Rather, he sees them as “flowing into one another and as distinct only in terms of the kind of ‘emphasis’ and ‘pervasive quality’ that they exert on the process of learning during different phases in the student’s life” (p. 193). Simply put, learning passes through three cycles in a general sense, however, in each cycle there are many other smaller cycles in which all three cycles are present and overlap with one another. The cycles go on and on in a repetitive manner, yet different from cycle to cycle, and represent the life-long learning of an individual.

The stage of romance: Romance is the first moment in the educational experience. “It is the stage of investigation and discovery, of asking questions and looking for answers, of seeking and savoring a wealth of new experiences” (Garland, 2005, p. 36). In this stage a child first realizes the relevance of something to her own life which arouses her curiosity, interest, enthusiasm, and enjoyment of discovery. However, this realization is vague and disorganized for the subject-matter “holds within itself unexplored connexions with possibilities half-disclosed by glimpses and half-concealed by the wealth of material” (Whitehead, 1967b, p. 17). To keep this emotional moment fresh and vivid, a teacher’s guidance is important to a child. “It is absurd to let him (sic) wander in the intellectual maze of men in the Glacial Epoch” (p. 33). However, it must not be forgotten that the emphasis during this stage is on “freedom”, “to allow the child to see for itself and to act for itself” (p. 33). Rather, a teacher’s

goal is to “strengthen the emotions of the child in her love of learning” (Scarfe & Woodhouse, 2008, p. 175) by indentifying what is important and relevant to the students.

A teacher’s first task, therefore, is “to romance the students: to excite their curiosity and awe in order to give the path of learning a heart” (Schindler, 2005, p. 48) since learning in this stage “has nothing to do with forced memorization” (p. 49). Rather, “to be romanced by something, to be in wonder at it, is to direct attention to it freely, willingly” (p. 49). To feel romanced by what they learn children will feel glad to be at school. Since all human beings tend to “be interested in something interesting” (p. 49), teachers should provide free expression to the interests in children. When this kind of guidance has been provided in the stage of romance, “another craving grows” (Whitehead, 1967b, p. 33) in a child’s heart, “knowing the subject exactly” (p. 34), and she “will naturally tend toward the mastery of skills that teachers and society alike desire for the students” (Schindler, 2005, p. 49). .

The stage of precision: Whereas the romantic phase is based on the immediacy and breadth of relations involved in learning, the stage of precision concerns “exactness of formulation” (Whitehead, 1967b, p. 18). This stage is “a patient process of the mastery of details, minute by minute, hour by hour, day by day” (p. 6). It is very familiar to educators, and Whitehead (1967b) criticizes the fact that it is “the sole stage of learning in the traditional scheme of education” (p. 34). “You take a text-book and make them learn it. So far, so good” (p. 5). However, “a stage of precision is barren without a previous stage of romance” (p. 18). It is useless in the personal development of children as “it is simply a series of meaningless statements about bare facts, produced artificially and without any further relevance” (p. 18).

Schindler (2005) comments that “without romance, without emotional soil, one is merely planting seeds in sand” (p. 48). In China pupils struggle to learn, and what they are learning makes no sense because they are not learning out of a desire to learn. Nor do they know why they are learning abstract ideas which seem to have no relevance to their lives. Whitehead (1967a) vividly illustrates that an educational system excessively dominated by precision reverses the natural way of learning. “In the Garden of Eden Adam saw the animals before he named them: in the traditional system, children named the animals before they saw them” (p. 198). Therefore, without the stage of romance, focus only on precision lacks the necessary grounding which helps improve the fruitfulness of precision. The result is that students are perplexed with apathy, boredom and mutiny, which finally lead to the inertia of ideas in their minds. In class students will sit, listening and taking notes, and after class they are expected to read the textbooks, go over the notes and memorize some valuable points which may appear

in exams. They never question the ideas delivered to them and “their minds are ‘turned off’” (McMurtry, 2003, p. 17).

However, this is not to suggest that precision is useless and unnecessary. Rather, precision must be based on romance for “there is no comprehension apart from romance”. It is “the child’s nature” to “refuse to assimilate the alien material” (Whitehead, 1967b, p. 33). So Whitehead (1967b) warns again and again that the stage of precision must not precede the stage of romance. Once romance is cultivated in a child’s heart, he believes that a desire to learn the subject in detail and in depth naturally follows (p. 33). A child is not satisfied with an initial understanding of the subject-matter. Rather, her interest leads to a more precise and complete mastery of it. The vague and disorganized relations felt in the stage of romance need to be collected and systematized. Anyway, it is an “inescapable fact that there are right ways and wrong ways, and definite truths to be known” (p. 34).

The stage of generalization: The third stage of generalization is the synthesis of abstract ideas with concrete facts in which the aim is to utilize the knowledge that has been obtained in the previous two stages. It “also involves the merging and comparison of the feelings originally experienced in the stage of romance with the conscious awareness of the subject-matter attained through the stage of precision” (Scarfe & Woodhouse, 2008, p.175). It is the stage of synthesis between experience and abstraction, connecting “the joy of romance with the discipline of precision by providing a broader scope for free expression” (Fidyk, 1997, pp. 66-67). It is, according to Whitehead (1967b), “a return to romanticism with added advantage of classified ideas and relevant technique” (p. 19), “leading to a new cycle of learning” (Scarfe & Woodhouse, 2008, p.175). It is also a stage of completeness and fruition which integrates the feelings and thoughts of the previous stages, and at the same time prepares the learners for a new and fresh experience of learning. Therefore, for Whitehead, the stage of generalization “draws both a closure to the present growth and offers an opening for the rhythm to unfold again” (Fidyk, 1997, p. 67).

At this stage the active and imaginative utilization of knowledge echoes the overall aim of education, which for Whitehead (1967b) is “wisdom” as “the most intimate freedom obtainable” (p. 30). The students’ ability to analyse and solve problems become subconscious habits, “the habit of the active utilisation of well-understood principles”, which is “the final possession of wisdom” (p. 37). Now learning emerges “from comparative passivity of being trained into the active freedom of application” (p. 37). It is the stage of “fruition” and “final success” (p. 19). The learner is now able to “qualify each immediate moment with relevant

ideas and appropriate actions” (p. 37). This is what Whitehead means by saying that wisdom “add(s) value to our immediate experience” (p. 30).

4. Educational Implications: The Rhythmic Claims of Freedom and Discipline

While Whitehead’s rhythmic cycles of learning “describe the natural course of human learning” (Garland, 2005, p. 39), the rhythmic claims of freedom and discipline are grounded in this theory of learning and provide educators with practical guidance in their practice. His main claim is that “education must model itself after the rhythm of the learning process in order to be effective and beneficial” (Whitehead, 1967b, p.39). Inherent in the rhythm of learning itself are the rhythmic cycles of freedom, discipline and freedom to which educators must pay close attention in their teaching practice. To be specific, there is a rhythmic alternation between freedom and discipline characterizing the rhythmic cycles of learning just like the natural alternations of “work and play, of activity and sleep, and seasonal periods” (p. 17). In the stages of romance and generalization educators should allow freedom to be dominant, and in the stage of precision discipline dominates and freedom is “the background” (p. 34). Lyle (1985) illustrate the rhythmic alternation of freedom and discipline as follows:

With freedom, we explore and ponder. In a new situation, if we have the freedom for it, we move from one idea or experience to another, sampling each, letting the whole sink in. Discipline, then, when we are ready for it, is undertaken to satisfy a craving for ordered knowledge that grows from these free explorations. When we have gained the ordered knowledge of the subject, then that knowledge gives us a new ability to explore and produce in a directed way, and thus a new freedom. (p. 128)

Therefore, for Whitehead (1967b), the two principles of education, freedom and discipline, “are not antagonists” (p. 30) as they appear. Rather, “they should be so adjusted in the child’s life that they correspond to a natural sway, to and fro, of the developing personality” (pp. 30-31). When the first stage of learning, namely romance, “has been properly managed, the discipline of the second stage is much less apparent” (p. 35) for it follows as a natural craving. The key to this natural transition, Whitehead believes, is interest. “Without interest there will be no progress ... [since] interest is the sine qua non for attention and apprehension” (p.31). If the interest can be retained, discipline will not be an issue of being forced or limited. Rather, it becomes voluntary and pleasurable in itself, that is “self-discipline”, “and that this can only be acquired by a wide use of freedom” (p. 35). In education “the only avenue towards wisdom is by freedom in the presence of knowledge. But the only avenue towards knowledge is by discipline in the acquirement of ordered facts” (p.

30). While Whitehead emphasizes the importance of interest in learning by allowing freedom, he is not suggesting that learning is a frolic. Rather, he is arguing for a balance between the interests of students, the precise and disciplined mastery of knowledge, and its free, active and imaginative utilization. This is why he makes the statement that “in no part of education can you do without discipline, or can you do without freedom” (1967b, p. 31). As Schindler (2005) puts it, “a good teacher balances the objectively imposed discipline of a syllabus with a sensitivity to the subjective needs of the students for whom the syllabus exists”. She “has clearly in mind what the students must know by the end of the semester”. More importantly, “‘pacing’ is built into the very structure of a syllabus”, which generates “spontaneity, sensitivity, flexibility” and makes the modification of the syllabus possible so as to satisfy the diverse needs of the students in their free pursuit of knowledge (p. 47). In other words, a teacher “has clearly in his mind what the pupil has got to know in precise fashion” (Whitehead, 1967b, p. 36), but how to get there is open and flexible depending on his pupils. In this way, the discipline of the subject is complemented by the freedom of students, and results in more effectiveness in learning. Therefore, for Whitehead (1967b), freedom and discipline complement each other so as to enable self-development to the greatest potentiality. They are “two essentials of education” (p. 30).

Education, then, begins and ends with freedom, and discipline intervenes in the intermediate stage in which freedom is subordinate (Whitehead, 1967b, p. 31). Freedom is important at the beginning stage because understanding is important. Without understanding, an idea alone is of no value. For the sake of understanding, students should be encouraged to freely explore the meaning of the idea and relate it to her own experience. Whitehead (1967b) states that, “the child’s nature naturally refuses to assimilate the alien material” (p. 33). Whatever is introduced, it must be relevant. The task of the teacher is to find out what is relevant to the natural interest of the child. Once interest is cultivated in his or her heart, it “is the time for pushing on” to discipline (p. 35). If the stage of romance is well managed, the discipline is the discipline from within, namely “self-discipline”, which can be acquired by allowing the students “reasonable freedom” to explore (p. 35). In effect, “the real point” for educators “is to discover in practice the exact balance between freedom and discipline which will give the greatest rate of progress over the things to be known” (p. 35). Whitehead (1967b) remarks that “the responsibility of the teacher at this stage is immense” because excessive discipline, which is an easy tendency in educational practice, dulls the minds of the students and kills interest (p. 35). So he proposes, “Get your knowledge quickly, and then use it” (1967b, p. 36). In the utilization of knowledge the emphasis is again on freedom because

imagination is important and freedom is a prerequisite for imagination (p. 97). “One must be free to think rightly and wrongly” (p. 93) in order to utilize the details that have been learnt in an imaginative and creative way. It is imagination and creativity that prevent knowledge from becoming inert and keep it alive.

Freedom in the stage of romance: At the beginning of a child’s schooling “the emphasis must always be on freedom” (Whitehead, 1967b, p. 33) because the task of this stage is to cultivate romance, the love of learning. To evoke students’ romance, “enjoyment” (p. 31) should be the characteristic of this stage. A child should be allowed to explore the ocean of knowledge freely, willingly and happily. With the initial knowledge of the world, the child is full of curiosity and wonder. Never rush to discipline the child with quantities of ideas at this stage. This is not yet a stage of right or wrong. Details are not necessary. Rather, a teacher’s task is to create an environment to evoke and enhance the initial feeling of the child towards the world, the interest, the curiosity, the freshness, the excitement, the enthusiasm, the fascination, and the wonder.

Discipline in the stage of precision: The stage of discipline is the stage with which most educators are familiar, teaching the subjects. In this stage the emphasis is not so much on “browsing and the encouragement of vivid freshness” (Whitehead, 1967b, p. 22), but on the details and the depth of the subjects. It may deal with some “drill, repetition and memorization”, but they are all “appropriate” (Garland, 2005, p. 40). Whitehead (1967b) recognizes this stage as an important stage as it concerns the mastery of detailed knowledge, and at the same time he cautions against excessive discipline which is apt to dull the interest. Therefore, a teacher must, he says, allow as much freedom as possible to sustain and evoke students’ interest so that they will not lose heart (p. 36). Here Whitehead once again reminds us of the rhythmic growth of the pupils, and claims that whatever we teach must fit into their stage.

It is crucial for Whitehead (1967b) that the appropriate form of discipline is self-discipline. It makes a huge difference that a child wants to do something instead of being forced to. As Whitehead says, “He is studying it because, for some reason, he wants to know it. This makes all the difference” (p. 11). Besides, if self-discipline is not encouraged, a child may become dependent on external discipline, for example, from his or her teachers and parents. The disadvantage is that when there is no such discipline imposed on them, s/he will stop learning because it does not come from his or her desire to learn. What’s more, with too much discipline, a child’s mind becomes disciplined. S/he does not know how to think on his/her own. Learning becomes a routine and knowledge becomes dead and inert. Therefore,

Whitehead (1967b) encourages self-discipline, discipline from within. In doing so, the choice of the tasks is the key and several “delicate points” need to be considered: whether “the tasks correspond to the natural cravings of the pupil at his stage of progress”, whether they allow the child to fully exhibit his ability towards their execution, whether the child can obtain a sense of satisfaction, whether “reasonable freedom” is allowed (p. 35). Fidyk (1997) states that, “when the search for knowledge brings satisfaction and intellectual growth”, the issue of self-discipline is “less onerous” (p.38). Only when self-discipline is cultivated, can learning proceed to the stage of generalization where greater freedom awaits a curious learner, who is equipped with necessary knowledge and eager to apply it into his or her life circumstances.

Freedom in the stage of generalization: While the stage of precision is mainly a stage of “what”, the stage of generalization is more a stage of “how”, namely how to utilize what has been obtained in the previous two stages in specific and realistic ways. This stage again sways back to freedom, allowing students to apply abstract knowledge freely, differently, and imaginatively to their experience in concrete real-life circumstances.

Whitehead locates university education in this stage. That means university students “are ready to relate abstract ideas to concrete facts in a joyful way, and university education should enhance students’ understanding of the wider application of their knowledge by relating it to their own experience” (Woodhouse, 1999, p. 193). Through the process of the utilization of knowledge, students are able to experience the fruits of learning and joys of curiosity and discovery, and thus to be motivated to go on learning. Therefore, Whitehead (1967b) states that the stage of generalization “is the fruition which has been the goal of the precise training” (p. 19).

The imagination plays a central role for Whitehead (1967b) in relating abstract ideas to concrete experiences. If a university fails to allow students to use ideas imaginatively, it has “no reason for existence” (p. 93). But what is the imagination? He describes its importance as follows:

It is a way of illuminating the facts. It works by eliciting the general principles which apply to the facts, as they exist, and then by an intellectual survey of alternative possibilities which are consistent with those principles. It enables men to construct an intellectual vision of a new world, and it preserves the zest of life by the suggestion of satisfying purposes. (p. 93)

Without the imagination playing a key role, any knowledge that is disseminated “will lack ‘excitement’, the concrete facts to which it appeals will generate no ‘possibilities’, and the ‘zest of life’ will be absent from both the professoriate and their students” (Woodhouse, 1999, p. 195). In contrast, when the imagination is actively involved in the process of learning,

Whitehead (1967b) asserts that “a fact is no longer a fact: it is invested with all its possibilities. It is no longer a burden on the memory: it is energizing as the poet of our dreams, and as the architect of our purposes” (p. 93). By preserving the connection between knowledge and “the zest of life” (p. 93) and by “suggesting that there are all sorts of ‘satisfying purposes’ worthy of the imaginative and intellectual endeavors of professors and students” (Woodhouse, 1999, p. 198), learning and teaching become zestful and “pregnant with potential” (pp. 193-194).

5. Summary & Application to Chinese Education

5.1 Summary

Whitehead raises a major problem in education, which he refers to as inert ideas. He approaches this problem by first analyzing its harmfulness, then finding its main source, and finally suggesting its treatment in practice. Inert ideas, for Whitehead (1967b), are those ideas “that are merely received into the mind without being utilised, or tested, or thrown into fresh combination” (p. 1). Gunter (2005) explains that “an inert idea is one which is learned by rote, conceived without reference to other ideas. It is appropriated, also, without reference to its own precedents, and above all without reference to how, beyond its present context, it might be developed, extended, or applied” (p. 213). Whitehead’s (1967b) concern for inert ideas stems mainly from his proposition that “the students are alive” (p. v), with “sense perceptions, feelings, hopes, desires, and of mental activities adjusting thought to thought, which forms our life” (p. 3). Their minds are “never passive” (p. 6). The ruthless packing of disconnected ideas in their minds will definitely cause some harmfulness just as a child is fed with a mix of food without any consideration of its ingredients, sequence or amount (p. 33).

It can be inferred that Whitehead (1967b) sees the problem of inert ideas as stemming not from knowledge itself, but from the way knowledge is delivered to students. He claims that “different subjects and modes of study should be undertaken by pupils at fitting times when they have reached the proper stage of mental development” (p. 15). His rhythmic cycles of learning suggest the natural development of students’ mind, and his rhythmic claims of freedom and discipline inform educators of its practical application. In order to enable students’ learning to develop through a tripartite cycle of romance, precision and generalization, teachers should follow the related rhythmic threefold cycle immanent in it, namely freedom, discipline and freedom in their teaching practice. While Whitehead’s (1967b) rhythm of education illustrates a rich educational experience from elementary to university education, at the same time he cautions against “the idea of a mythical, far-off end

of education” (p. 19). He insists that “the pupils must be continually enjoying some fruition and starting afresh” (p. 19). “Unless the pupils are continually sustained by the evocation of interest, the acquirement of technique, and the excitement of success, they can never make progress, and will certainly lose heart” (p. 38). Therefore, each educational moment, according to Whitehead (1967b), should include all three rhythmical elements. He warns us not to exaggerate the sharp distinction of the terms (p. 27). Whitehead (1967b) states that in education they “are all present throughout” and complement one another, differing only in “emphasis” (p. 28). As Scarfe & Woodhouse (2008) put it,

While each of the stages cannot be said to be rigidly separate from the others, learning is a process, which in general flows in a cyclical manner from one phase to the next. Without permitting the flow from phase to phase, and by neglecting this natural pattern in the variance of methods of presentation of a subject-matter, teachers may stunt the learning of their pupils. (p. 174)

It is important that teachers “take great care to understand the ways in which students learn and provide the appropriate kinds of occasion for different kinds of learning to take place” (Woodhouse, 1995, p. 359).

The problem of inert ideas, then, can be largely attributed to the neglect of the rhythm of students’ intellectual development. As Whitehead (1967b) says, “With good discipline, it is always possible to pump into the minds of a class a certain quantity of inert knowledge” (p. 5). Discipline, for Whitehead (1967b), is not from teachers or parents. For him, “the only discipline is self-discipline” (p. 35). This notion of “self” is particularly important because “the purpose of education is to stimulate and guide their (students’) self-development” (p. v). By using the prefix “self” again and again, Whitehead is emphasizing a hard fact that the students are the center of education, and teachers and all other factors are subordinate. The same idea is expressed by Woodhouse (1995) as follows: “The teacher must recognise that it is the student who is largely responsible for whether or not she or he learns, since learning is a process of self-determination in which the subject freely engages upon a course of action the success of which is within his or her power to attain” (p. 359). Students’ learning, for Whitehead (1967b), is not something that can be imposed upon them. Rather, it is a matter of “free choice” (p. 30). However, this is not to suggest that teachers are not important in the development of a child. Instead, a good teacher may enhance a student’s self-development by offering “guidance and stimulation”, and a bad teacher may “kill” the impulse by which a student grows (p. 39). It is a sad fact that in educational practice, educators easily forget the active character of their students, which results in education becoming a pure act of

disciplining students' minds with precise ideas, leading to either no learning or hatred towards learning. In this, we should always remember that, "the principle of progress is from within: the discovery is made by ourselves, the discipline is self-discipline, and the fruition is the outcome of our own initiative" (Whitehead, 1967b, p. 39).

5.2 Application to Chinese Education

In chapter two I pointed out that with the introduction of quality-oriented education in China in 1999, educators have realized that traditional test-oriented education is problematic. The main problem with this reform, however, is that it does not enable students' all-round development as long as its only goal is directed towards students' success in exams. There has been no attempt to formulate a theory of learning that supports the reorientation towards a more student-centered approach. As a result, quality-oriented education becomes only a slogan. This, I believe, underlines the relevance of Whitehead's critique of inert ideas and account of the rhythm of education, which together offer a basis of support for quality-oriented education in China. If quality-oriented education is to move beyond passive learning and succeed in developing students' full potentialities then Whitehead's emphasis on active and imaginative learning should be integrated into its philosophical base.

Two notions in Whitehead's critique of inert ideas are of importance to Chinese education, namely interest and usefulness. First, Whitehead emphasizes over and over again that interest is the basis for learning, and should accompany a student throughout the entire learning process. However, Chinese education does not consider the interests of students and forces subjects down their throats. As a result, learning is not interesting and becomes a burden to most students. Second, Whitehead affirms that education should be useful, by which he means that there should be considerable emphasis on the immediate application of knowledge to real life. The problem with Chinese education is that learning is all about receiving as many ideas as possible without encouraging students to put them into practice. The result is that they view learning as abstract and do not see its relevance to life.

To make education interesting and useful, which the reform of quality-oriented education in China claims to be, Whitehead's rhythm of education may work as a guideline. He argues that a student's motivation to learn springs from her own interest, which gives her joy and spurs her on to continue learning and utilizing knowledge. Learning is concerned with what the student is interested in, how s/he feels about something, and what s/he wishes to do on the basis of what her body tells her. The body, heart and mind make the student a whole being, who listens to all three wherever s/he goes and whatever s/he does. When educators realize

that learning comes from within, namely from the student's own interest, will and desire, they would understand that their task is not merely to pass on ideas. Rather, they should evoke and strengthen students' initial interests so as to "help them discover and appraise the unactualized potential of their interests, imagine and select the most appropriate possibilities relevant to actualizing their potential, and provide flexible but consistent frameworks for ensuring self-disciplinary mastery...." (Regnier, 2007, p. 11). On this basis students learn freely how to identify possible answers to any question, as they are guided and encouraged by teachers similarly engaged in the search for wisdom. At the same time, students should be encouraged to help each other and share their understanding. Through mutual help and sharing, they come to realize the importance of relationships with others, the value of sharing knowledge, and the significance of cooperating with their peers. Learning can then become diverse and joyful, and a community of learners is built in harmony with others (Cobb, n.d.).

Chapter Four

A Balanced Education and Its Application to China

1. Introduction

I have shown in previous chapters how an overemphasis on exams is likely to produce inert ideas as currently takes place in education in China. Ideas remain inert when separated from the concrete experience of the student. This chapter discusses Whitehead's advocacy of technical education as the basis of a balanced curriculum, which enables all students to relate abstract ideas to their concrete experience (Scarfe & Woodhouse, 2008, p. 176).

I first introduce what Whitehead means by a balanced education and then analyze his account of technical education as well as art and aesthetic appreciation which, as Fidyk puts it, are "the aim of technical education" (1997, p. 52). I go on to explore the significance of a balanced education to China, and then make a conclusion to the thesis.

2. A Balanced Education

Because Whitehead (1967b) views each student as a whole being with a body, mind, and spirit, their self-development must be the goal of education. It is insufficient, as is the case of most schools, to focus only on the mind since "in teaching you will come to grief as soon as you forget that your pupils have bodies" (p. 50). Students' bodies, are, for Whitehead, the base of all learning, and the connections between body and mind are made possible by bodily feelings, "focussed in the eyes, the ears, the voice, and the hands" (p. 50). The freedom to express one's bodily feelings by making material objects with the dexterity of one's hands, for example, achieves "a co-ordination of senses and thought, and also a reciprocal influence between brain activity and material creative activity" (p. 50). The value of technical education is that it enables this kind of reciprocity between mental activity and the creativity involved in making things with one's hands.

Whitehead's (1967b) advocacy of an education based on a literary, scientific and technical curriculum (p. 48) is designed to facilitate an integration of intellectual and practical work. A literary curriculum is "the study of language" (p. 49), which expresses feelings and thoughts in verbal or written form. Its aim is to cultivate "aesthetic appreciations by the successful employment of language" (p. 49). A scientific curriculum is "primarily a training in the art of

observing natural phenomena, and in the knowledge and deduction of laws concerning the sequence of such phenomena” (p. 49). A technical curriculum is mainly “a training in the art of utilizing knowledge for the manufacture of material products”, requiring “manual skills, and the co-ordinated action of hand and eye” (pp. 49-50). Whitehead (1967b)) believes that “every form of education should give the pupil a technique, a science, an assortment of general ideas, and aesthetic appreciation”, but not as “a mere mechanical mixture of the three curricula”. Rather, he wishes to follow “the dominant emphasis, whether literary, scientific or technical, and without loss of co-ordination to infuse into each way of education something of the other two” (p. 54). Put differently, while all three parts of the curriculum can be present, there is an alternation of dominance during which the other two are subordinate in rather the same way as the alternating rhythm of freedom and discipline. The three curricula are to be co-ordinated with one another so as to enable a balanced growth of the pupil as a whole person.

3. The Function of Technical Education

Whitehead sees technical education primarily, though not exclusively, as occurring between the ages of thirteen and seventeen, namely the period of secondary education. In the context of the rhythmic cycles of learning, it might be thought that technical education falls into the stage of precision, dealing only with the grammar and structure of such activities as “mapmaking, metalwork, pottery, and carpentry” (Fidyk, 1997, p. 44). However, what he has in mind is rather different. Technical education is both precise and concrete as it involves not only mental activity, but the activities of body, hands, eyes and ears, enabling students to see the application of precise ideas when they are engaged in making objects. Upon the completion of making a vase or a wooden box, for example, the student may feel joy and satisfaction because he or she sees the fruit of learning in a concrete way. Technical education enables students to understand how to apply abstract ideas to concrete experience, and maintain a balance between romance and precision in the stage of precise learning. “In this manner, technical education, while rooted in the cycle of precision, incorporates elements which point beyond to the cycle of generalization” (Fidyk, 1997, p. 50).

For Whitehead (1967b), technical education is more than a practical experience to create ideas, like young children studying “the shapes and colors by simply manual operations of cutting out and of sorting”. Rather, “It is creative experience while you think, experience which realises your thought, experience which teaches you to co-ordinate act and thought, experience leading you to associate thought with foresight and foresight with achievement”

(p. 54). In other words, technical education takes root in abstract ideas, and translates these ideas into manual activities. During this process, the student learns how to co-ordinate the head and the hand so as to enable him or her to work in a harmonious way. Such an experience requires creativity to overcome the limitations of theoretical thought. When ideas are utilised, and their limitations exposed and overcome creatively, the student will gain “an understanding of an insistent present” (Whitehead, 1967b, p. 3), and be equipped for future discovery on the basis of a full understanding of ideas through their application and connection to other ideas.

As Whitehead (1967b) remarks, “The intellect does not work best in a vacuum” (p. 48). The purpose of learning does not lie in mere theoretical knowledge, but in its application in action. Whitehead (1967b) says, “The stimulation of creative impulse requires, especially in the case of a child, the quick transition to practice” (p. 48). Any study, be it literary or scientific, is for action. “No man (sic) of science wants merely to know...he acquires knowledge to appease his passion for discovery...he knows in order to discover” (p. 48). Therefore, “education should turn out the pupil with something he knows well and something he can do well” (p. 48). Put differently, theory and practice, or thought and action, should be intimately united in education. In this way, as Fidyk (1997) puts it, ideas “come alive, gaining vividness from an immediate translation into constructive activities involving the body, hand, eye, and brain” (p. 46). Moreover, through the practice of utilising ideas by making real objects, students see “the limits of their application” (Whitehead, 1967b, p. 54) and gain first-hand knowledge, which is the “ultimate basis of intellectual life” (p. 51). Thus, technical education enables students to grow through an integration of headwork and handiwork.

This relationship between headwork and handiwork is an intimate one. As Whitehead (1967b) says, “there can be no adequate technical education which is not liberal, and no liberal education which is not technical: that is, no education which does not impart both technique and intellectual vision” (p. 48). Only when technical and liberal education are both integrated in the school curriculum, will students realize that learning and work are not separate activities, and understand that learning is related to their everyday life. Otherwise, “ideas become ‘inert’ and knowledge remains ‘dead’” (Woodhouse, 1995, p. 349).

While technical education enables the unity of theory and practice, mind and body, mental and manual work, its ultimate goal, Whitehead (1967b) believes, is to cultivate romance or joy in learning or at work. In his words, the ideal is to realise “a commonwealth in which work is play and play is life” (p. 44). For technical education to achieve such an ideal, it cannot do without art and aesthetic appreciation.

4. The Magic of Art and Aesthetic Appreciation

Whitehead (1967b) proclaims that “you cannot, without loss, ignore in the life of the spirit so great a factor as art. Our aesthetic emotions provide us with vivid apprehensions of value” (p. 40). In other words, art, as Scarfe & Woodhouse (2008) propose, “acts as a lure to consciousness in discriminating between what is worthwhile in human life and what is not” (p. 178). Its power is intrinsic, present but not visible, like magic. In Whitehead’s (1967b) words, like “sunshine in the physical world”, it is “a condition of healthy life”, giving “vision” and “direction” (p. 58).

The magical power of art and aesthetic appreciation is made possible by bodily feelings, which “bring the subject into a direct relationship with the quality of the object that elicits and enhances them” (Woodhouse, 1995, p. 354). Different from the scientific method inherited from 17th century physics that focuses exclusively on abstract quantitative calculations, bodily feelings enable children and adults to appreciate the qualities of the objects in their everyday lives (p. 356). Whitehead (1967a) uses the example of the sunset to vividly illustrate such a difference. He says, “When you understand all about the sun and all about the atmosphere and all about the rotation of the earth, you may still miss the radiance of the sunset” (p. 199). By appreciating the beauty of the sunset, the subject directly feels a connection to it. As Woodhouse (1995) puts it, “aesthetic appreciation is fundamental to human experience because of a close connection to feelings linking us directly to both the sunset and the universe as a whole” (p. 356). However, such vivid, concrete and beautiful feelings are ignored and suppressed by the scientific method which dominates most schools today. They do not recognize the foundational character of bodily feelings in learning and focus on intellectual training in abstraction from the lived experience of students. Woodhouse (1995) states, “In doing so, they stifle the enjoyment that accompanies artistic and imaginative pursuits”. As a result, “learning is no longer enjoyable for far too many people who shy away from appreciating the beauty that surrounds them in the world” (p. 358).

Whitehead (1967b) argues that schools must allow students the freedom to express their feelings and encourage the aesthetic appreciation and artistic enjoyment that flow from them. For example, students could be sent at regular intervals to “suitable plays”, to concerts, to the cinema and to other artistic activities (p. 58) so as to cultivate “some love of music, some enjoyment of drama, and some joy in beauty of form and color” (p. 41). According to Scarfe & Woodhouse (2008), these aesthetic emotions will “provide students and workers alike with ‘the sense of value, the sense of importance [...] the sense of beauty, the aesthetic sense of

realized perfection' with which their own work is imbued" (p. 278). For Whitehead (1967b), when "the life of the spirit" is instilled into the "the whole personality" (p. 40) through the manifestation of art, students and adults are likely to appreciate the value and beauty in their own lives. The result is that, not only will the "passivity" (p. 40) of labor "be turned into joy, triumphing over its weariness and its pain" (p. 44), but a full recognition of other people similarly engaged in meaningful work can arise in a creative community in which everyone can participate.

5. Application to Chinese Education

Whitehead's recommendation for a balanced educational curriculum, if applied to Chinese education, has the potential to solve some of the problems that have been discussed in the previous chapters. First, his idea of including technical curricula in education helps to overcome the sharp difference between theory and practice, headwork and handiwork, learning and life. The problem of Chinese education, as stated earlier, is its overemphasis on exams, which results in learning being abstract and irrelevant. Students are always treated as exam machines, receiving knowledge from schools and then unloading it on exam papers. Such education, for Whitehead (1967b), is abstract and useless. The most ideal product of it is "a merely well-informed man (sic)", whom he thinks of as "the most useless bore on God's earth" because she possesses "scraps of information" (p. 1). Such a person does not know how to utilize ideas in her everyday life, and therefore, does not even understand life. In contrast, Whitehead (1967b) argues that knowledge should be put into practice, thought should be initiated for action, and learning should revolve around the one and only subject-matter, which is life. (pp. 6-7, 47-48, 50). Technical education, Whitehead (1967b) believes, if integrated into the whole curriculum, makes possible the immediate and creative unity between abstract knowledge and concrete experience, which forms students' lives. It enables the quick transition from thought to action through the creative involvement of body, eyes, ears, and hands. At the same time, as Whitehead (1967b) says, "thoughts gain vividness by an immediate translation into acts" (pp.53-54). In this way, students grow through a mutual interaction of mind and body, and mental and manual activity. Since manual work is essential in life, it should be united with learning so that students understand that learning is rooted in life, and headwork and handiwork complement each other. In such an education which includes technical curricula, there is no antithesis between theory and practice, headwork and handiwork, learning and life. Rather, according to Fidyk (1997), "they are in dynamic harmony as parts of the whole" (p. 50).

Second, Whitehead's consideration of art and aesthetic appreciation as the basis of learning strengthens the life of the spirit which has long been lost in Chinese education (Wang, 2004). Dominated by exams, education in China totally excludes art and aesthetic appreciation. Though aesthetics is listed as one of the four goals in the reform of quality-oriented education initiated in 1999, its true meaning remains lost. Most schools respond by merely having one or two hours of music or drawing class each week (Liu, 2005). Parents even go as far as forcing their children to attend some training classes in either music or drawing during their spare time. They send them to various competitions and exams so that they may get the privilege of going to senior secondary school or university if they win a prize or pass a certain exam. Because of the pressure, the dull training and the full-time workload, children rarely enjoy or understand music or drawing. Art, in this manner, becomes a subject to learn, no different from physics or mathematics. In doing so, children's aesthetic appreciation and artistic enjoyment are stifled or even killed. Woodhouse (1995) warns that the overall result is that "they show no interest in cultural pursuits or aesthetic appreciation when they become adults" (p. 355). Without aesthetic appreciation to give "the sense of value, the sense of importance, ...the sense of beauty" (Whitehead, 1967b, p. 40), a person easily gets lost in life because the intrinsic value of life is dead and external factors determine his or her thoughts, actions, and life. As a result, people live with "bare valuelessness" (Whitehead, 1967a, p.196) and fall into "dull materialism" (Whitehead, 1967b, p. 41). Without values flowing from their hearts as a guide to their lives, people are likely to be misled and live for material goals.

This is exactly what is happening in China. Exams are the theme of children's life, and no one cares about how they feel physically or emotionally. "The only thing people, including their parents, are concerned with is their scores or grades" (Wang, 2004, p. 4). Money, in turn, is the theme of adults' life. The result is that people fall into blind and endless pursuit of money without due attention to their health, but "with the accumulation of wealth, the feeling of happiness and satisfaction is going down" (Wu, 2007).

In contrast, Whitehead's (1967a) emphasis on art and aesthetic appreciation represents an understanding that the quality of life is important. Art, for Whitehead (1967a), is "the fertilization of soul...providing the soul vivid, but transient, values...It is something which adds to the permanent richness of the soul's self-attainment" (p. 202). In other words, art has the function of liberating the soul and enriching our inner life by focusing our attention on concrete experience and developing our appreciation for the various emerging values in the world. It reflects who we are and reminds us of how we are feeling in an artistic and

imaginative way. Therefore, art, for Whitehead (1967a), is not about teaching students a few melodies or songs by offering a subject named music. Rather, it is “in the general sense...any selection by which the concrete facts are so arranged as to elicit attention to particular values which are realisable by them,” and its aim is to cultivate “a habit of art” (p. 200) in students, which strengthens their feelings for beauty and vivid values. The result is full self-development because, as Scarfe & Woodhouse (2008) states, “Art enables us to recognize the perfection of which humanity is capable” (p. 178). Put differently, when art becomes part of students’ life, they may realize not only who they are, but who they can be and live towards it. For Whitehead (1967b), the ultimate goal of art is to enhance students’ “receptiveness to beauty and humane feeling” (p. 1) so that they may live an artistic life, a life of beauty with values flowing from within. As Cobb puts it, “for Whitehead, the purpose of education is primarily aesthetic, it is primarily for increasing strength of beauty....the overall focus is clearly on what happens in the interior life of people” (cited in Wang, 2004, pp. 9-10).

Third, instead of focusing on students’ intellectual development at the expense of their physical and psychological health, a balanced education suggested by Whitehead (1967a) enables a balanced self-development of the pupil as a whole person with body, mind and spirit. For Whitehead, the aim of education is “wisdom”, which, he believes, can only be obtained through “a balanced development”. As he puts it, “it is this balanced growth of individuality which it should be the aim of education to secure” (p. 198). However, test-oriented education in China only focuses on students’ intellectual development and ignores their body and spirit. Education dominated by the precise training of students’ mind without taking their health, interests, feelings and emotions into consideration results in several problems. Students feel a lot of pressure and do not like schooling; they are physically tired; there is a lot of strain between children and parents as well as between students and teachers; the vigorous competition in exams blinds students from important values such as friendship, co-operation and being loving and caring. Moreover, as Phipps (2005) remarks,

there is also too often a correlative ‘polluting’ of the educational environment in which the values of prestige, money, fame and position (ranking) become the extrinsic motivation of learning concurrently overwhelming the purity of the love of learning, the free exercise of curiosity, the delight in discovery and the reverence for learning...The extrinsic value has replaced the intrinsic value of learning and, therewith, the death knell of creativity is sounded. (p. 187)

Finally, the love of learning is drowned by the pursuit of high grades and the promise of material rewards.

For Whitehead, these problems are the result of a lack of balance in the development of students. There is an imbalance between abstraction and concreteness, theory and practice, thought and action, precision and romance, discipline and freedom, mind and body, and mind and spirit that leads to students' boredom, fragmentation, narrowness and stagnation. Under the National Policy of Economic Development through Science and Technology, education in China is mainly directed towards scientific and technological training. While there is nothing wrong with science and technology, as Wang (2004) points out, "when science becomes scientism, when intellect becomes intellectualism, there is a danger to harm people's imagination and creativity and to cause the student to miss opportunities for pleasure, interest, and adventure" (p. 5). The problem with scientism and intellectualism is that they only recognize what exists in the physical world and study it in abstraction by denying the rich content of the spiritual world, such as beauty, love and ethics. In modern test-oriented education, "the richness of life is forgotten, the aesthetic vividness is forgotten, the student's enjoyment is destroyed, the romance is forgotten". It "trains a way of seeing things as abstract rather than concrete", leading to students' "insensitivity and lack of creativity" (Wang, 2004, p. 5).

The kind of balanced education advocated by Whitehead should be introduced to the Chinese school system based on an integration of literary, scientific and technical education. It would recognize the importance of science and technology without denying the liveliness of students and the significance of art and literature to self-development. As Woodhouse (1995) states, with a "greater emphasis on concrete, vivid, and beautiful experiences" (p. 354), such an education would pay attention to the bodily feelings of students. For example, in studying the scientific aspects of the sun, the atmosphere and the rotation of earth, students would be encouraged to appreciate the beauty of the sunset. They might then feel a connection to it, because their "feelings provide a fluid connection between the world and the subject's experience" (Woodhouse, 1995, p. 354). This approach would make science more interesting, relevant and meaningful. When students feel a connection to the sun, the atmosphere, the earth, and the whole universe, they begin to realize that learning is rooted in their everyday lives, and become appreciative of the beauty of the world. As a result, "the bodily feelings at the base of all experience provide concrete ways in which human beings can appreciate the value of the world around them" (p. 347). The same is true in literary education. In learning a poem, the memorization of the words of the poem and the name of its author are not as important as enabling the students to feel how it is relevant to them. Without any relevance, the poem is abstract and meaningless. Only when students are encouraged to freely express

and share their feelings flowing from reading the poem, will its meaning, beauty and power be felt and come alive.

To restore the delicate balance between abstract ideas and concrete experience, Whitehead suggests an inclusion of a technical education which enables students to translate knowledge into something specific by utilising their body, eyes, ears, and hands. More importantly, aesthetic appreciation can flow from making and appreciating handwork which embodies such values as proportion, grace, and beauty. In this way, students can become a community of creative co-workers, appreciating and sharing with each other.

The aim of a balanced education that includes a scientific, a literary and a technical curriculum is to cultivate a balanced, whole person through an integrated development of their mind, body and spirit. Such an education is quite different from test-oriented education. Rather than viewing students as abstract intellectual beings, it pays equal attention to their bodily feelings, spiritual cultivation, and intellectual capabilities as formative of their self-development. Rather than treating them as exam machines, it encourages students to listen to their body and heart. Rather than seeing students as passive receivers, it recognizes their creative power and potential for future discovery. Rather than misguiding students' pure pursuit of knowledge by drawing their attention to money, fame and power, it tries to elicit their love in and for learning by making them see the beauty and power of knowledge. Rather than viewing each student as a competitor in exams, it encourages them to work with each other as companions along a journey seeking wisdom. All in all, rather than merely aiming at students' success in exams, the aim of Whitehead's balanced education is to obtain wisdom, that is "to learn 'the art of life', namely '(i) to live, (ii) to live well, (iii) to live better'" (Whitehead, 1929, cited in Scarfe & Woodhouse, 2008, p. 178).

6. Conclusion

This thesis is a critical reflection on modern test-oriented education in China in light of Whitehead's educational philosophy. The purpose is to analyse the harm done by test-oriented education, and more importantly, provide an alternative based on a student-oriented approach advocated by Whitehead. To make such a reorientation possible, I interpret some of Whitehead's educational thought based on my knowledge of Chinese education and my own educational experience in China.

First, I refer to Whitehead's theory of learning, namely the rhythm of education, to analyse the problem of overemphasis on exams, which is inert ideas. Whitehead believes that learning is a rhythmic alteration of freedom, discipline and broader freedom in the rhythmic

cycles of romance, precision and generalization. Freedom allows students to pursue whatever is interesting, exciting, and important to them. Due to the wonder, freshness and uncertainty in freedom, students at this stage are able to develop their full imaginative ability. This first stage of freedom is of considerable importance to younger children who first step into the ocean of knowledge with curiosity and awe. If it is not properly respected, their attitude towards learning may become negative for ever. But if it is properly guided, students may cultivate a sense of love, or romance, for learning and knowledge, which naturally leads them to the subsequent stage of learning, precision. While discipline is required for the study of the grammar of any discipline, for Whitehead (1967b), the only discipline is self-discipline which comes from students' experience of freedom. As he remarks, when freedom is allowed and romance is alive in children's hearts, they "know how to go about their work, want to make a good job of it, and can be safely trusted with the details" (p. 35). Therefore, during this stage, "romance is the background" (p. 34) and freedom must be allowed to complement discipline. A teacher's task is to guide the students along the difficult path of precision without dulling their mind by allowing as much freedom as possible. Realizing the fact that teachers always tempt to "teach pupils a little more of fact and of precise theory than at that stage they are fitted to assimilate" (p. 34), Whitehead warns us not to forget the ultimate goal of teaching and learning, namely wisdom. According to Whitehead (1967b), wisdom is different from knowledge. Rather, it is the utilization of knowledge. It must not be thought that once precise ideas are obtained, one possesses knowledge and wisdom, since learning is not complete at this stage. Wisdom depends on the third stage of learning, generalization, in which the details of knowledge become "well-understood principles" and learning becomes "active freedom of application" (p. 37). Students now get into an unconscious habit of applying whatever has been obtained in the previous two stages in the circumstances requiring it, and "this mastery of knowledge, namely wisdom, is the most intimate freedom obtainable" (p. 30). If, in the stage of romance students are curious explorers in the ocean of knowledge, in the stage of generalization they become confident sailors. Knowledge is now converted to power, the kind of power that is tempered by wisdom.

Whitehead argues that, if education is to impart wisdom, it must respect the natural development of students' intellect and satisfy their cravings by adjusting the quality of teaching to enable learning to flow from one phase to another. Lack of attention to the rhythm of education easily leads to inert ideas because there is always a temptation to reduce the whole process of education to the stage of precision. When quantities of ideas are pumped into students' minds without any consideration of their interests and needs, the result is

inevitably students' inertia. They are forced to work hard, yet do not understand these ideas, nor do they understand why they are learning them. Finally they lose heart, and become tired, bored and frustrated. "Without this rhythmic integration in education, the vitality of education is diminished and the soul and enthusiasm of students are drained" (Phipps, 2005, p. 179).

Second, I interpret Whitehead's idea of a balanced education to overcome the imbalanced development of students in Chinese education. Due to the overemphasis on exams, education in China is a competition in intellectual development. In order to win the competition, students are treated as if they were an abstract entity, without body and spirit. Their health, feelings and experience are all forgotten. Students learn in a total abstraction. They do not understand the purpose of learning and its application in everyday life. As a result, "they learn to separate abstract ideas learned in school from the concrete experience that is their life" (Woodhouse, 1995, p. 355). This, in turn, leads to their stagnation in aesthetic appreciation, which, for Whitehead, is the most disastrous result. When students become ignorant of concrete aesthetic appreciation, it means that they become blind to beauty. "Without beauty as an integral part of their lives, individuals are unable to find lasting satisfaction on either a concrete or spiritual level" (Woodhouse, 1995, p. 358). In China students at school do not like schooling, and adults are not happy with their lives although their living standards are improving dramatically. Without beauty and aesthetic appreciation in their lives, they easily get lost. Their attention is directed to material things that are of lesser importance, such as money, power, fame and position, which become the motivation for students to learn and adults to work. Health, which deserves most attention, is largely ignored. Friendship, love and honesty are forgotten because of the need to survive the competition for material goods. People live in a world where each individual views another as an abstract other, and the deep communication through feelings and aesthetic appreciation are absent.

An education that deals only with the intellect is insufficient for Whitehead (1967b) because it overlooks the balanced development of students as whole beings, one in which their creative thinking and concrete aesthetic appreciation are considered as having most importance. He states, "in its essence a liberal education is an education for thought and for aesthetic appreciation" (p. 46). The advantage of including art in education is that it will not cause any "strain on our resources" (p. 40) in an economic world in which competition dominates people's lives. Rather, in the face of overwhelming "material force", art would maintain "the dignity of mind" (p. 46) and give "control" and "direction" (p. 58) to people in their pursuit of knowledge, beauty and wisdom.

Today China is advocating quality-oriented education, and the aim is to improve the whole nation's civic comprehensive qualities by developing students' all-around abilities. Though it is undergoing various problems, quality-oriented education is a milestone in the advance of Chinese education. If we look back at the educational history discussed in chapter two, the reform of quality-oriented education is unique. For the first time, students are the main reason for reform. For Confucius, social stability was the aim of education, for Mao, the revolution, and for Deng, the economy. Now, however, the door is open for alternative possibilities which could bring significant changes to the life of students, teachers, and the entire community of learners in China.

While this thesis is inspired by a student-oriented approach to education based on Whitehead's philosophy of education, I recognize that there will be many challenges in implementing such ideas, the most significant of which is the deep-rooted examination system. However, as Porturios (1998, cited in Moore, 2000) observes even though a single person may not be able to change the whole world, "we are compelled to act anyway" and our action is bound to "make a difference" (p. 276). I believe that as more and more people in China, especially educators, get to know Whitehead, the necessary reorientation from test-oriented education to the kind of student-oriented education advocated by Whitehead will gradually take place. The groundwork for such change has already been laid by the establishment of the different institutions referred to in chapter one.

In conclusion, the purpose of this thesis is to call upon educators in China to integrate Whitehead's educational thought into their teaching practice by restoring romance, freedom, and concrete experience together with the precision, discipline, and abstraction, which have preoccupied them until now. Only then will the full and free self-development occur at the core of education, capable of "evok(ing) into life wisdom and beauty" which otherwise "would remain lost in the past" (Whitehead, 1967b, p. 98).

NOTES

1. Whitehead describes the form of perception identified by Descartes and Hume as “presentational immediacy,” namely perception gained through the five senses (1929, pp. 142-151). His account of feelings is a complex one in which he distinguishes between physical, conceptual, and transmuted feelings (p. 271) as well as propositional feelings (p. 299), imaginative feelings (p. 307), and intellectual feelings (pp. 317-318).

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