Teaching Secondary School Geography in Shanghai:
Challenges and Prospects for Curricular Reforms in China

by

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ABSTRACT

In the context of rapid economic and other reforms, the secondary school curriculum in China has recently undergone major changes. Unified national curriculum materials have been replaced by a variety of newly developed curricula, textbooks, and other teaching materials. This study focuses on a comparative analysis of the development and implementation of the new geography curriculum in secondary schools in Shanghai. The central research objective was to explore the degree to which changes in the geography curriculum achieved the desired results. The analysis was based on a detailed examination of the new geography textbooks and other teaching materials. Data from a questionnaire of teachers, classroom observations, and formal interviews were utilized to determine the impact of curriculum change on teaching practice. Two city-wide geography examinations were also analyzed to determine their influence on the implementation of the new curriculum. The findings of these investigations are situated in the context of conventional models of curriculum change and a review of the literature regarding the teaching of geography.

The analysis reveals that geography curriculum reform in Shanghai did not have the desired impact on the content and structure of the subject, nor did it have any significant positive affect on geography teaching practice. The nature of the examination system was clearly the dominant influence, both in terms of curricular content and classroom teaching methodologies in secondary school geography. The findings highlight a dichotomy between the intended goals of curriculum reform and the examination system which compelled teachers to cling to the traditional teaching methods of lecturing and rote learning in order for their students to perform well on examinations. Elements of a comprehensive plan for curriculum change, highly sensitive to Chinese circumstances, and which include the provision of adequate resources and professional development for teachers, and a fundamental restructuring of the examinations, are suggested.

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To my mother

CHAPTER I

Introduction

Background and Rationale

This thesis will review and analyze recent curricular reforms in China with a particular focus on the geography curriculum in Shanghai. The issues which arise in the process of educational reform deserve attention because they have deeply affected the outcomes of curricular change, and because they continue to have a significant influence on teaching practice. These changes have occurred as just one component of a wide array of economic and social reforms initiated in China in the late 1970s.

At the Third Plenum of the Eleventh Party Congress in December 1978, Deng Xiaoping, as the head of the reform wing of the Chinese Communist Party (CCP), called for comprehensive reforms in China. Under his direction, a new era in the modern history of the People's Republic began. The first turning point was the Party's decision to restructure the economic system in December 1978. During the first phase of the reform period (1978-1984), the main objective was to restructure the system of agricultural production. Introduction of a household responsibility system occurred in the countryside whereby individuals were given greater autonomy to determine agricultural practices. The goal was to improve production incentives and management at all levels of the rural agricultural economy. The new system, along with changes in farming institutions and the pricing and marketing of output, contributed to a dramatic growth in agricultural production. According to Galenson (1993), the average annual growth rate of output in agriculture was 5.6% in this period, double that of the period 1957-1978.

These changes had unexpected consequences for education during this initial period of reform. Older children who otherwise would have attended school, could

instead work productively on the farm or in the home, freeing parents for more productive tasks. As a result, many of them left school. In addition, locally hired teachers who were previously given work points like other workers under the commune system, and who shared profits accordingly, also received a plot of land under the responsibility system. Since they could also farm the land for profit, this became a priority for a number of rural teachers to the neglect of their performance in the classroom (Marton, 1990).

During the second stage of the reforms (1984-1988), the focus shifted to the reform of non-agricultural enterprises. State-owned enterprises were to gradually transform "from being the administrative subsidiaries of the state into independent business firms capable of making their own management decisions and responsible for their own profits and losses, to develop a competitive market system, and to institute macroeconomic controls" (Galenson, 1993, p. 20). Such structural changes were expected to boost production. Moreover, in order to increase both productivity and profits, virtually all enterprises began to offer financial and other incentives to their employees. Even though unskilled factory workers had earned a relatively low basic salary, they could easily double their income through production-based bonuses. Although such changes in the largely urban state-run enterprises were not as well developed as those in the countryside, and only affected the 20% or so of the population living in China's cities, during this period the average annual growth rate of output in the industrial sector increased to 11.0%, which was 1.4% greater per year than the period 1957-1978. Overall, the average annual growth rate of GNP from 1978 to 1988 was 9.6%, nearly double that for the period 1957-1978 (Galenson, 1993).

Since the early 1980s, China has also pursued a policy of opening to the outside world. This "open door" policy was designed to encourage the input of western scientific and technological expertise in economic and educational sectors. In 1984, 14 Special Economic Zones and 14 coastal economic development zones were established to provide an attractive environment for foreign investment, especially in high technology exporting

industries, to earn much needed foreign exchange. Taken together these changes have marked a dramatic departure from the collectivist past. While the ultimate success or failure of these policies is the subject of much debate, most people agree that the key to much of China's long term development lies with the reform of the educational system.

The links between the new policies of the reform period and the need for changes in education were made clear by the politically rehabilitated Deng Xiaoping in the late 1970s. His calls for "modernization" drew attention to China's relative backwardness compared to the developed nations (especially the West) particularly in terms of the economy, education, and science and technology (Henze, 1987). The term modernization (*xiandaihua*), as it was utilized by Deng and his supporters, evoked a powerful rhetoric to push forward a program for immediate action (Henze, 1990). As early as May 1977, in a speech to the Central Committee of the CCP, Deng established the terms for these actions. "The development of science and technology," he proclaimed, were "the key to achieving modernization," and it was necessary to "improve education at every level...to promote scientific and technological work by raising the standards of education at the same time as making it available to more people" (Deng, 1985, p. 49). Deng's call for the modernization of education and the improvement of quality led to reforms in all sectors of the Chinese educational system.

No part of China's educational system has undergone more extensive reforms since 1978 than secondary (middle) schooling. The first and perhaps most obvious and significant practical outcome of these reforms was the reintroduction of university entrance and graduation examinations. This change reestablished the historical link between successful completion of secondary school and career opportunities that existed before the turmoil of the Cultural Revolution (1966-1976). Thus, since 1978, candidates for university and college have been selected on the basis of academic performance rather than their class status, family background, or political activism. There has also been some experimentation with new methods of conducting examinations, particularly for university

entrance. For example, in 1985 Shanghai Municipality became the first, and thus far the only region, to conduct its own university entrance examinations. Moreover, in 1986, Shanghai Municipality and Zhejiang Province began testing new systems of examinations. In addition to the university entrance examinations, students also wrote provincial level senior secondary school leaving examinations (*huikao*), which were to ensure that they were up to the required standards. The results of these graduation examinations formed part of the criteria for selecting candidates to enter universities. As this new entrance procedure became more widely known, it was put into place throughout most of China by 1994.

Another important change in secondary schooling was the promotion of vocational education and training. The goal was to bring about a major readjustment of secondary school education which, according to the Central Committee of the CCP (1985):

> ... will gradually lead to the establishment of a system of vocational and technical education, stretching from primary to senior levels, having proper coordination with the related occupations, being reasonable in structure and linking up with ordinary education. (p. 12)

Thus, by 1988, different types of vocational schools, which played only a minor role prior to and up to the end of the Cultural Revolution, enrolled 45% of all students at the senior middle school level in China (Thøgersen, 1990).

In 1986, the Chinese government also promulgated a plan calling for popularization of nine year compulsory education. The state now legally requires that all children complete a basic education up to the end of junior secondary school (Grade 9). However, the practical implementation of such a policy has come up against numerous social, administrative, and financial obstacles. In spite of the new policy, China still only spends about 3% of its GNP on education. This should be compared with the median of

4% to 5% in other developing countries and 6% or much higher in developed countries (World Bank, 1985).

A further, and perhaps less obvious educational reform has been the shift in focus since 1990 from the "popularization" of education (*puji*) to the "raising of quality" (*tigao*). In Shanghai, the result has been a significant reduction the number of senior secondary schools and a commensurate rise in the number of vocational and technical schools. In practical terms this has also meant that fewer students have been enrolled in senior secondary schools, while the period of schooling has been extended and the curriculum has become more standardized and academically oriented outside the vocational sector.

Education in China has always been perceived as an instrument for social and political change and as a tool for economic development. This is clearly reflected in a report from the National Secondary Education Conference held in 1954, which stated:

> The future problem for existing schools is not one of remodeling but one of progress and development. Under the illumination of the general line, these schools should continue to serve the socialist construction enterprise and keep the nation supplied with a regular flow of construction personnel. (Hu & Seifman, 1976, p. 67)

However, China's education system traditionally has not been geared to serve the majority of students. Secondary schools functioned largely for the benefit of students who would proceed to university, a mere 3% to 4% of the total (He, 1991). This focus on advancement to post-secondary schooling was also clearly reflected in the nature of curriculum materials and the examination system. Even though the textbooks were revised several times, most were characterized as too sophisticated and crammed with content, uninteresting, and poorly organized. For example, some science texts were too sophisticated for students to understand. On the other hand, texts in history and geography were lacking in up to date information (Wang, 1990b). These circumstances

were compounded by the examination system which was heavily focused on subject content and the recall of knowledge.

While progress towards the universalization of education has been fairly steady, Chinese educators soon realized that national unified curriculum materials, especially textbooks, became an obstacle to raising educational quality. In more developed regions such as Shanghai, Zhejiang, and Jiangsu, textbooks were considered too simple, whereas school officials in remote areas considered them too difficult. In response to this problem, the State Education Commission (SEC) in 1986 initiated the sixth secondary school curriculum reform since the establishment of the People's Republic in 1949. The main goal was to address the problems of highly centralized control over curriculum and teaching materials. Similar to the reform of the management system of urban enterprises whereby decision making was partially transferred to the local level, the SEC decided to decentralize the existing unified curriculum and teaching materials by "calling for tenders" (*zhaobiao*) from local publishers and education bureaux to develop and implement new curriculum materials to be used in local schools. After evaluating the proposals, the SEC determined the number and type of curricula and teaching materials to be developed, and who would be responsible for their compilation. Four categories of curriculum that roughly corresponded to four broad types of socio-economic circumstances were eventually adopted. These included materials for use in (i) more developed regions, (ii) predominantly agricultural regions with poor economic and educational conditions, (iii) minority nationality regions, and (iv) all other regions. In 1990, the compilation of nine different sets of teaching materials based on these four categories was undertaken by nine different publishers across China.

This study will focus on curricular reform in Shanghai as the quintessential example of one of the most developed regions in China. Shanghai is China's largest and most economically advanced city. Its educational standard traditionally has been regarded as higher than most other regions in China. Primary education here, for example, became

universal by 1958 in Shanghai's urban city districts, and by 1983 in Shanghai's largely rural suburban counties. Meanwhile, many poorer regions in China were "still struggling towards this goal" (Mak & Lo, 1996, p.378). Shanghai has always been a pioneer in taking new initiatives and in adapting to new conditions, including in education. When the SEC called for proposals for "tenders", educational specialists in Shanghai responded with all their expertise and enthusiasm. Educational authorities in Shanghai were thus granted the responsibility for developing a set of curriculum materials for schools in the coastal developed regions including Shanghai Municipality, and Jiangsu and Zhejiang Provinces.

While there has been much research undertaken on the issues of educational reform in contemporary post-Liberation China (see Marsh & Morris, 1991), very little has been published regarding these most recent changes to the curriculum. Even less has been written about the nature of specific initiatives and changes within particular subjects. One notable exception was a study that analyzed the nature of secondary school geography in relation to the changes in post-1949 communist China (Marton, 1990). During the period prior to the introduction of reforms in the late 1970s, geography, like other subjects in schools and universities, was perceived largely in terms of its relevance for the construction of an orthodox socialist society. Geography was thus described merely as physical or economic under the prevailing orthodoxy. Elements of the traditional humanistic notions of the discipline, such as the subtleties of the human-environment relationship, were purged as "capitalist-bourgeois" points of view. The intellectual work of geographers was reduced to the cataloging of natural resources, the delimitation of China's physical regions, issues of desert control and water diversion, and the "correct" planning of communes. By the 1980s, coinciding with the more open climate of the reform period, the Chinese geographic literature began discussing the reintegration of human and physical geography and how this would contribute to modernization (Lu, 1987; Shen, Zuo, Tan, & Liao, 1980). Moreover, greater recognition of the increasing intensity of problems such as rational utilization and protection of the environment, over-

population, shortages of natural resources and energy, and problems with infrastructure have provided new challenges for geographers. One of the most important areas of study that has emerged in light of recent economic changes in China was the concern over regional disparities, distribution of industry, and urban and regional planning (Chen, 1983).

The above discussion highlights how the convergence of a number of factors has provided the impetus for changes to the geography curriculum in China's secondary schools. From one side pressed officially sanctioned imperatives for reforms and modernization in virtually all sectors. From the other, pressed the enormous practical problems of the resulting transformations. Under such pressures, and within a relatively open and politically pragmatic climate, educational authorities were charged with the responsibility of training personnel to cope with the new challenges. Changes to the geography curriculum, therefore, were fundamentally linked to the wider socio-economic circumstances of a rapidly transforming China.

Defining the Problem

This thesis will examine in some detail the most recent changes to the geography curriculum with a view to understanding the underlying processes and other factors which determined the success or otherwise of such changes. This study will undertake a comparative analysis of the development and implementation of the new geography curriculum in secondary schools in Shanghai. This analysis seeks to address the central research question:

> Have changes to the geography curriculum in Shanghai achieved the desired results?

The process of answering this question will be of interest to Chinese educators in their efforts to undertake meaningful reforms to the educational system in general, and to those who seek improvements to the teaching of geography in particular. The working hypothesis of this thesis which arises from the research question articulated above is that:

> Geography curriculum reforms have not had a significant impact on the content of the subject nor have they positively affected geography teaching practice.

A further related hypothesis is that:

> The examination system still influences to a significant degree curricular content and teaching methodologies in secondary school geography.

There are three components to the central research question each of which must be investigated to evaluate these hypotheses. The first is a critical examination of the new geography curriculum and supporting materials. The second is an analysis of the nature of teaching practice as it relates to the new curriculum, and the third is an exploration of the role of examinations in secondary school geography teaching. Four supplementary research questions will also be addressed:

(a) What exactly were the changes to the geography curriculum?

(b) Were the new teaching materials (textbooks) consistent with the goals of curricular reforms?

(c) Have changes to the curriculum resulted in any changes to the nature of geography teaching practice?

(d) What has been the impact of the examination system on geography teaching?

Data and Methodology

The data and methods of analysis for this thesis are based upon a detailed case study of reforms to the geography curriculum in Shanghai. Framed as it is within the context of China's macro-level reforms, this case study will highlight both the specific situation in Shanghai and some relevant generalizations for curricular reforms in China. To provide a basis for answering the questions posed in the previous section, we begin with a discussion of the decision making process for reforms to the geography curriculum in Shanghai. A review of the conventional models of curriculum development and of the literature regarding geography teaching in English speaking countries will be conducted in order to provide a foundation for understanding the issues which emerged in the process of curriculum development and implementation in China. The new geography textbooks will also be analyzed to identify and characterize specific curricular changes. Data from a questionnaire was utilized to ascertain teachers' views on changes to the textbooks and the impact of these changes on teaching practice. Extensive observations of several geography classes were also undertaken to determine the possible impact of these changes on teaching practice. Formal and informal interviews were also conducted in order to probe certain issues more deeply and to cross check the reliability of observations and questionnaire results. In addition, two city-wide geography graduation examination papers, including one based on the new curriculum, were collected as part of the analysis to determine the impact of examinations on teaching practice.

Analysis of the new geography textbooks was undertaken to determine the topical content and structure of the new curriculum and whether these changes were consistent with the goals of curricular reform. Classroom observations determined the skills being taught and revealed the nature of how geography teachers conducted themselves in the classroom by focusing on the dominant teaching methods. Analysis of the geography examinations determined what was being tested in terms of topical content and skills and

the levels of cognitive ability that were required for success on the examinations. The latter component of this analysis will provide a sense of the impact of the examination system upon geography teaching practice. Taken together, these analyses will determine the extent to which the new geography curriculum was successfully implemented.

During the second term of the 1994-1995 school year, 200 survey questionnaires were sent to geography teachers via the Putuo, Changning, Xuhui, and Yangpu District Education Colleges in urban Shanghai. The main purpose of the survey was to understand the views of geography teachers on the new textbooks and their possible impact on teaching practice. These districts were chosen for several reasons. According to numerous informants, since Putuo was a less affluent area of the city, schools and students there were generally considered as somewhat below average. Schools in Changning District, on the other hand, were considered average in terms of student achievement. This district was also easily accessible as it was adjacent to Putuo and was near the author's residence in Shanghai. Xuhui District was considered above average and it served as the main trial site for the development and implementation of the new geography textbooks in Shanghai. As such, it was appropriate that part of the research be undertaken in this location. The schools in Yangpu District were using a different set of geography textbooks. Thus, responses from the questionnaires returned from this district were not included in the final analysis, but they did serve as a useful point of reference for comparison.

Lack of time and adequate resources prevented the construction and pilot testing of a very sophisticated questionnaire. The design of the instrument, including the general thrust of the questions and their precise wording, were undertaken with the approval and close supervision of a senior member of the geography curriculum reform team in Shanghai. During one of the geography teachers' professional development meetings, held every second Thursday afternoon across Shanghai, teachers from the four districts were directed by local educational research specialists to complete the questionnaire.

Questionnaires were collected 15 minutes later and then forwarded to the Geography Teaching Materials and Methodology Research Office at East China Normal University. A total of 153 questionnaires were returned from the four districts. In addition to the 39 questionnaires from Yangpu District that were excluded from the data analysis, a further 25 from the other three districts were either incomplete or incorrectly filled out and were thus deemed unusable. The responses from 89 questionnaires were used for the analysis presented in this thesis. A translated version of the questionnaire is reproduced in Appendix A. Details of the specific questions and the information targets of each are also elaborated upon in Chapter III. While the statistical significance of data from these survey questionnaires has not been determined, combined with the analysis of a number of other data sources described below, it was felt that the resulting findings were reasonably representative of the situation in Shanghai. Based on the background information collected, the 89 geography teachers surveyed were categorized into three broad groups. The results of the analysis of the questionnaire data from these different groups of teachers will be discussed in Chapter III.

Two city-wide junior secondary graduation examinations in geography administered in 1994 were collected and translated. These two examination papers were written as part of the set of graduation examinations for junior two (Grade 8) students. These were the first city-wide examinations held during the trial stage of the new geography textbooks. One of the examinations was administered only in the 22 trial schools using the new geography curriculum materials. The other examination was administered in all remaining schools still using the old textbooks. The analysis determined the proportion of fill in the blank, multiple choice, written response, and map, chart, and diagram completion questions. Proportions were based upon the number of marks allocated for each type. The content of each of the topics being tested was described in detail and the cognitive level of questions asked in each topic was categorized in a table of specifications under knowledge, understanding and application, and higher

mental processes. Specific criteria for categorization under the appropriate cognitive level have been established based on work by Marton (1990). These are discussed in some detail in Chapter IV and in Appendix E. Based on these criteria, tables of specifications were computed for each examination. Findings from the analysis of these two geography examinations, including their potential impact on geography teaching, were compared with the results of a more detailed study of similar exams administered in the mid- to late-1980s. This comparison served to emphasize the significance of the more limited analysis undertaken in this study.

This work was supplemented by first-hand field investigations undertaken during an eight month research residence in Shanghai from September 1994 to May 1995. The fieldwork included conducting 34 formal and many other informal interviews. Among those formally interviewed, 14 were geography teachers (3 of whom were retired), 3 were editors who compiled the new geography textbooks, 1 was an editor at a Shanghai educational publisher, 2 were administrative officials from the Shanghai Education Bureau, 3 were educational specialists at local education colleges, 4 were university professors, 4 were parents, and 3 were students. The organizations to which these informants were affiliated are explained in the next chapter. Most of these interviewees were identified and selected through the contacts established at these organizations. Seven of the teachers interviewed, for example, were also observed teaching through pre-arranged classroom visits with local officials. One-on-one interviews were conducted before or after their class. Other teachers, administrators, educational specialists, editors and professors were identified and selected in consultation with the relevant officials and were interviewed where they worked. Student and parent informants were arranged entirely through personal contacts and were interviewed either in their homes or in the author's apartment.

Since the formal interviews were all arranged in advance they each followed a relatively uniform structure which targeted specific issues. The particular focus of each

interview varied according to the category of informant. Discussions with geography teachers examined the impact of the new textbooks on their teaching practice. With administrative officials, the key topic was the process of curriculum change and their perspectives on the implementation of the new textbooks. Interviews with the editors focused on the specific changes in the new textbooks and the rationale for such changes. The objective with students and parents was to explore their general concerns about education and school life, and their views of the new geography textbooks and assessment procedures. The dozens of informal interviews were less structured affairs undertaken on an ad hoc basis with the kinds of informants described above as opportunities arose. Not surprisingly in the context of such fieldwork in China, these informal discussions were frequently much more revealing and interesting than the formal interviews. In all cases, extensive field notes were recorded during and immediately following all interviews.

Eleven geography classes were also observed in nine different schools during the fieldwork. In all cases these observations were arranged through district level specialists who were also in attendance, sometimes for previously arranged observations of their own. Numerous scholarly papers and articles, official documents, and other materials were also collected during this period and are cited specifically throughout this study. Moreover, during the period 1983 to 1989 as a geography teacher in Shanghai, the author was involved in several educational research programs including a joint project between East China Normal University and the University of Victoria. This project sought to introduce "active learning" strategies into Chinese geography classes at a time when teachers were encouraged to experiment with new teaching methods by the educational authorities. The author also participated in a program to develop new teaching materials that was organized by the local education college to assist school teachers in the implementation of new teaching strategies. This extensive teaching and educational research experience provided the foundation for this author's interest and expertise in understanding the nature of educational reform in China. This has also provided a

comparative basis for the exploration in this study of the nature of curricular reform and geography teaching in Shanghai during the 1990s.

It is appropriate at this point to briefly reflect upon the quality of these data and how this investigator's prior experience in Shanghai might affect the findings of this study. It is virtually impossible, of course, to eliminate all potential bias in such research. This is particularly so in a Chinese context charged with many unseen tensions, delicate sensitivities, and potential for deeply traumatic political and personal fallout. Taken together, these factors advise a level of caution in the field which mitigate a very high degree of methodological rigour. Thus, considered separately, each type of data collected for this study might be perceived, in whole or in part, as subjective or unrepresentative. Which is why this researcher has sought, wherever possible, to consider a range of sources simultaneously to confirm particular findings. As to the authors partiality, elements of subjectivity and potential bias are acknowledged. These are eclipsed, however, by the insights which arise from the author's prior professional and personal experiences in Shanghai.

Organization of the Thesis

This thesis is comprised of five chapters. Following this introduction, Chapter II provides a review of the literature on models of curriculum development and change and a detailed examination of the processes of curricular change in Shanghai during the early 1990s. The processes of curricular change in Shanghai are compared to conventional models reviewed in the largely Western literature in order to highlight the major differences.

Chapter III analyzes the new geography textbooks and explores the impact of the new texts on geography teaching through analysis of the responses to the questionnaire,

notes on classroom observations, and field notes from the interviews. The Western literature on geography textbooks and geography teaching practice is also briefly reviewed to highlight the differences between such teaching in English speaking countries and in China.

Chapter IV illustrates the impact of the examination system on teaching practice. Since the influence of examinations in China remains significant, it warrants a separate discussion in this chapter, although many of the issues raised here are also relevant for the analyses in Chapters II and III. The findings of this analysis are compared with similar research during the 1980s, which emphasized the dominant role of the examinations in teaching practice and educational reform.

Chapter V reviews the specific findings of this study by highlighting changes to the geography curriculum in the context of educational reforms in Shanghai and across China. This concluding chapter situates these reforms in China in the context of some of the more general, largely Western based, theoretical issues regarding curriculum development and change. Chapter V concludes with a discussion of the important implications of this study for the processes of curricular reform in China.

CHAPTER II

Models of Curriculum Change and Secondary School Curriculum Reform in Shanghai

This chapter begins with a review of the conventional (Western) models which conceptualize processes and frameworks for implementing curriculum change. A number of common general themes will be identified and summarized which provide a foundation for understanding such change. A comparison will be made between elements in the Western models and elements relating to the process of reforms to the geography curriculum in Shanghai. This comparison is based upon an analysis of the most recent reforms in the geography curriculum. The objective is to demonstrate how certain elements of these reforms were inconsistent with, or challenged certain elements and assumptions in the conventional models reviewed here. Several of the issues raised by this analysis of the process of curriculum reform in Shanghai will be highlighted.

The Conventional Wisdom

Wise has pointed out, "[t]o create goals for education is to will that something occur. But, goals, in the absence of a theory of how to achieve them, are mere wishful thinking" (1977, p. 48). In other words, understanding the process of curricular change is essential for its successful implementation (Fullan, 1991). Many examples illustrated in the literature have suggested that failure to adequately conceptualize the process of curriculum change will ultimately result in the failure of such change (for example, see Fowler, 1989).

At least three models that conceptualize the processes and practice of curricular change are associated with conventional theories. The first is Research Utilizing Problem Solving Process (RUPS), which has incorporated, with minor alteration, five classic steps in the change process--awareness, interest, evaluation, trial, and adoption for curriculum improvement. This model also includes five steps, the main ideas of which are summarized as follows (Doll, 1986):

1. identifying a need for change;
2. diagnosing the situation in which change is to take place;
3. considering alternative courses of action;
4. testing the feasibility of a plan for change;
5. adoption, discussion, and adaptation of successful change effort (p. 283).

Details of several actions to achieve each step are also identified in the literature, including developing awareness, sensing problems, running a trial phase during which further attempts are made to understand the situation, evaluating outcomes and process, and so on.

The second is a more abstract model called CLER. The specific steps of change are not discussed, but the model is concerned with configurations, linkages, environments and resources (Davies, 1982). Because of its highly generalized nature, this model is considered useful outside the usual range of curriculum planning activities. While it is perhaps acceptable at an abstract theoretical level to emphasize the multidimensional complexity of curriculum change, the model provides no meaningful analytical specifications for practice. It does, however, emphasize the need for a broader, somewhat more philosophical, foundation for the understanding and implementation of curriculum change.

A third model is called PARA, an acronym for profile, action, response, and analysis. Its four main steps are introduced below (Urich, Mitchell & LaVorgna, 1983):

1. making a profile of each participating teacher's aspirations in the direction of better task performance;
2. creating an action plan expressing exactly what the teacher will do within an allotted period of time;
3. gathering information from students' behavior;
4. analyzing the action sub-steps to determine whether each of them has been appropriate, readily put into effect, helpful, and necessary (pp. 104-107).

Without going into all the specific details of each of these models, it is possible to highlight some general conceptual themes that are relevant for the discussion of curriculum change in China. The various preconditions and processes for change illustrated in these models are each fundamentally linked to schools, classrooms, students, teachers, teaching methods, and school-level administrators--sometimes referred to as curriculum participants or "workers". The point here is that change is perceived as a kind of multi faceted "grass-roots" based project. Determining the content of the curriculum, while important, is clearly neither the basis nor the means for implementation of curriculum change. The central concern is with process. The most important element of this process is appreciation of the role of teachers. Teachers are considered the key link between the objectives of change and its successful implementation. As Hough (1978, p. 59) points out, "[t]hose who can make the real difference are the people in the schools."

The importance of understanding the culture and environment of schools and teachers is also evident in these frameworks of change. "Schools are cultural structures through which education is promulgated" (Grundy, 1987, p. 57). Different schools have their own school culture, within which its teachers also form their own teaching culture. Understanding the forms of this teaching culture can help curriculum workers understand many limits to and possibilities of educational change. Four broad forms of teacher culture are identified--individualism, balkanization, collaboration, and collegiality--within which the norms, values, beliefs, and practices of teachers are "reproduced or redefined" (Hargreaves, 1985, p. 22). Why teachers might variously support, resist or show

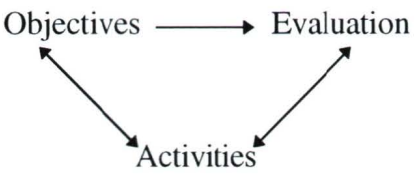
ambivalence towards innovation and change is at least partly linked to this usually school based teaching culture.

The literature also reveals a number of actions, organizations, and environmental conditions necessary for change, which all relate to the processes conceptualized in the models introduced above. The first is the creation of a suitable climate and establishment of good working conditions in which curriculum change will be undertaken (Doll, 1986, p. 296). The general attitudes of participating personnel, the quality and quantity of personnel, physical resources and materials at the disposal of staff members, and the absence of undue and detrimental pressure and influence can result in different climates and working conditions. In addition, open-mindedness is one of the preconditions for allowing the expression of different opinions on certain issues. The "exposure", open discussion, and exploration of solutions is perceived as an important part of the process of change. An open-minded attitude of participants is more likely to lead to collaboration and successful change. Curriculum workers should try to create and maintain a climate of freedom for those with whom they work. People improve only when they feel free to improve (Doll, 1986).

A second action is the achievement and maintenance of an appropriate tempo and the timing of curriculum change. Doll captures the issue thus: "not too fast, not too slow, not too carelessly planned, not too big, not too insignificant, not too recently considered." (1986, p. 299). He elaborates further by indicating that this is "... easier to state than to live by, but it is extremely relevant to the process of improvement." (Doll, 1986, p. 299). Careful timing of activities for curriculum improvement is vital, requiring a balance between gradualism and rapidity. Careful monitoring of the forces that promote or impede improvement can provide the real guide to the appropriate speed of implementation. The pace of change relates directly to the thoughtfulness with which improvement is sought (Doll, 1986).

A third action relates to the selection of methods and activities for facilitating the achievement of specific objectives in the change process. Curriculum workers will need to narrow the many possibilities to a few, according to agreed upon objectives, to provide teachers meaningful and useful learning activities. In order to take decisions regarding the selection of meaningful activities, participants need to have a common understanding of the purpose of change which is, in turn, linked to the rationale for change. Thus, if teachers do not understand the purposes of change, they will likely consider the change, and activities relating to the change, as an imposition. When change is imposed from the outside, it is often bitterly resented. Under such circumstances, teachers are perhaps making changes only for the sake of change, which ultimately will result in no change at all.

The last major action to facilitate the process of curriculum improvement is "building into each project from its very inception, procedures for evaluating the effects of the project" (Doll, 1986, p. 302). Processes of evaluation must assess the extent to which objectives of a project or activity have been achieved. The relationship between evaluation and objectives is illustrated below (from Doll, 1986, p. 303):



The diagram suggests that methods of evaluating the achievement of the objectives of change should be considered as part of these objectives. Thus, the selection of activities, relevant to those objectives, is made with reference to possible means of evaluation. Curriculum workers often think of activities first and then "either ignore or defer consideration of objectives and evaluation" and, since the action of evaluation is "taken so

infrequently ... the quality of both old and new educational practices usually goes unassessed" (Doll, 1986, p. 302).

Some recent literature has been published which illustrates how some of these issues of curriculum change have been considered in the context of East Asia. Generally speaking, the purpose of education in East Asian countries is geared to the needs and priorities of national politics (see Marsh & Morris, 1991). The patterns of curriculum development in countries such as Hongkong, Singapore, South Korea and Macao have demonstrated that teachers are generally neglected in the process of change. School curricula are developed by groups of elites and down loaded to teachers for implementation. Moreover, the extent of central control of the school curriculum broadly corresponds to the degree of centralization of the political system. For instance, the standard school curriculum in Singapore is developed, and its implementation monitored by the Ministry of Education. The aims of the school curriculum are geared towards economic survival by fully exploiting the potential of each pupil. Textbooks have to be reviewed and approved by the Ministry of Education. Although there are some independent publishers, the official Curriculum Development Institute of Singapore (CDIS) produces most textbooks, teacher guides and other audio-visual materials for most subjects. However, CDIS materials are often supported with workshops for teachers, a service which private publishers find hard to emulate.

Decisions about educational policies in East Asian countries are made at a high level, involving directors of key divisions in educational ministries, by ministers for education, and often the respective executive bodies. In addition, debates about key educational policies in East Asia are most often initiated by political elites. In Singapore, for example, along with three ministers in charge of education, a government led Parliamentary Committee on Education helps to collect feedback from various sources about educational issues. Final decisions are made only after internal consultation within

the Ministry of Education and at the cabinet level, after which major policy initiatives are submitted to Parliament for approval (Wong, 1991).

The most salient characteristic of curriculum development in South Korea is that the mode of decision-making is highly centralized (Cheng, 1990). Since the school curriculum is determined at the national level, all schools in Korea follow the same standardized curriculum. The Ministry of Education decides whether to change the curriculum or not, what to change, and how to change it (Shin & Hoh, 1991). While some literature has also focused on the general issues of curriculum and education in China, no specific study has been undertaken that examined the details of exactly how the curriculum, textbooks and teaching plans were developed and implemented in practice.

This review and summary of the models which conceptualize processes of curriculum change and implementation have provided a foundation for comparison with the circumstances of change in China. The remainder of this chapter will introduce the particular elements of reform in the secondary school geography curriculum in Shanghai and will highlight those which challenge or contradict elements of the models introduced above.

The Processes of Curriculum Development in Shanghai

Initiating Curricular Reform in Shanghai

Since China's open-door policy was promulgated in the late 1970s, its economy has developed rapidly. Having experienced many difficulties in its economic reforms, the Chinese government realized that the key to resolving such problems lay "in improving human and intellectual resources through education" (Fan, 1990, p. 111). To underscore their determination to improve standards of education, in May 1985 the government issued the "Decision of the Central Committee of the Communist Party of China on the

Reform of the Educational Structure", hereafter referred to as the "Decision". The guiding principle was that "education must serve socialist construction while socialist construction must depend on education" (Wang, 1986, p. 31).

One of the first responses to the Decision was the release of the "Nine Year Compulsory Education Law" in 1986. A nine year compulsory education system has gradually been introduced, region by region, since then throughout China. However, the existing curricular organization of primary and secondary school education came to be viewed as contrary to the task of popularizing and achieving widespread nine year compulsory education. The main problems were related to the curriculum and teaching materials. Regardless of local socio-economic circumstances, and varying conditions in schools, the same curriculum and textbooks were being used throughout China. Due to the unified character of teaching materials, students in rural areas, especially in the poorer regions, had greater difficulty with the standardized curriculum, while students in more developed urban areas often felt "hungry" to learn more (You, 1994). Thus, in 1986, the State Education Commission (SEC) responded by proposing sweeping changes to the existing curriculum and teaching materials for primary and secondary schools.

A National Supervisory Committee of Primary and Secondary School Teaching Materials attached to the SEC (hereafter referred to as the "National Committee") was established in Beijing in 1986. The mandate of the National Committee was to initiate reforms of the existing curriculum and teaching materials used in primary and secondary schools across China. The plan was that by the end of 1990, the national standardized teaching materials would be replaced by four categories of curriculum that roughly corresponded to four broad types of socio-economic circumstances. The first was for schools in developed regions with advanced economic and educational conditions. The second was for schools within regions that were predominantly agricultural, and were generally considered as areas with poor economic and educational conditions. The third was for schools in minority nationality regions, especially in west and southwest China.

The fourth was for everything else and represented all the "average level" schools in China (You, 1994, p. 3).

Across the four categories, there were nine sets of materials developed by different publishing houses and local education bureaux. Three sets of teaching materials were prepared for the developed regions. The first two were from the Shanghai municipal authorities and Zhejiang Province for eastern and coastal China, while Guangdong Province developed another set of teaching materials to be used by schools in southern China where there were many interactions between Chinese and foreigners. Another two separate sets of teaching materials for poor and remote regions were also prepared by educational authorities in Sichuan and Hebei Provinces. Publishers at Northeast Normal University in Shenyang in Liaoning Province also developed a set of teaching materials especially for key schools (*zhongdian xuexiao*) across China. Key schools were those identified by local or regional educational authorities, or occasionally the SEC, for preferential treatment in terms of selecting incoming students and the allocation of resources. While schools across China generally had a system of six year primary and three year junior secondary levels, rural areas were more likely to have a five year primary school and four year junior secondary school system. Thus, Beijing Normal University and the People's Publishing House individually developed a set of teaching materials for the "five-four" school system. In addition, the People's Publishing House in Beijing also developed curriculum for the "six-three" school system. The National Committee stressed, however, that whatever the category of school system they would serve, the new curriculum and teaching materials must be prepared under the guidance of "the education policies and the teaching plan of nine year compulsory education" promulgated by the Chinese government (Li, 1994, p. 2).

Shanghai, as a local educational jurisdiction, was invited by the National Committee in 1988 to compile a set of independent teaching materials and a course plan for schools in the more developed coastal regions (Li, 1994). The reaction from the

Shanghai government was very positive. A Reform Committee of Shanghai Primary and Secondary School Curriculum and Teaching Materials (hereafter, referred to as the "Shanghai Committee") was established in the same year to oversee the changes. Under the Shanghai Committee, there were two sub-committees. One, called the Reform Office, was responsible for compiling a general system-wide curricular reform plan. The other was called the Supervisory Committee, and was responsible for examining and approving all the new course plans, teaching materials, and other related changes. The ultimate purpose of the reform stated by the Shanghai Committee was to "satisfy the needs of economic and social development" (Wang, 1990a, p. 3).

Phase 1: The Plan for Curricular Reform in Shanghai

The reform process in Shanghai consisted of two major phases. The task set up by the Shanghai Committee in phase one was to produce a tentative plan for curricular reform, which included changes to the General Teaching Outline (*Jiaoxue Dagang*) that specified overall curriculum organization and timetable arrangements for various school subjects. The process of formulating the new plan in phase one was divided into three periods which are summarized below (Wang, 1990b).

Period one: investigation and research (July-December, 1988). The Reform Office, according to the terms of reference from the Shanghai Committee, organized and trained 30 specialists in five groups to conduct "social investigations". The groups were comprised of "first rank teachers" (*yiji jiaoshi*), who had at least 20 years of teaching experience, "high rank teachers" (*gaoji jiaoshi*), who had moderate teaching experience and who had also made special contributions in educational research in primary and secondary schools, university professors, and personnel from several educational publishers. Their task was to collect a range of opinions about the existing curriculum structure and teaching materials from various sectors including from primary and secondary schools, technical schools, local education bureaux, universities, factories,

companies, rural enterprises, research institutions, publishers, and so on (Reform Office, 1990). The Reform Office also retained the Teaching Methodology Research and the Comparative Education Research Institutes, both of East China Normal University, to review materials regarding educational change in foreign systems and in China, and to study theories of curriculum development.

Period two: writing the plan (December 1988-April 1989). Each of the 30 members of the five social investigation groups under the Reform Office submitted a tentative plan which, following meetings and discussions within the groups, were utilized to compile five comprehensive proposals for curriculum reform in Shanghai. School principals, administrators, and other special rank teachers (*teji jiaoshi*) who had long teaching experience and who had published in the field of education, were invited to analyze and compare these five plans which were then further refined to form three alternative plans. Finally, school principals and specialists in education and psychology worked with selected members of the original social investigation groups to "revise and merge" these three plans into one comprehensive plan for primary and secondary school curriculum change in Shanghai.

Period three: examination and approval (April-August 1989). The first draft of the reform plan was submitted to the Shanghai Supervisory Committee on April 4, 1989. After a few revisions, the final draft was completed on August 16, 1989 and was approved by the Shanghai Supervisory Committee. The Shanghai Supervisory Committee then sent the plan to the National Committee for final approval.

Highlights of the Shanghai Plan

The Shanghai reform plan indicates that the new teaching materials must respond to the central government policy by being "...geared to modernization, to the outside world, and to the future, ... must serve socialist modernization, combine work with production, and train productive workers and [revolutionary] successors with overall

development in moral knowledge, and health education" (Wang, 1990b, p. 44). Under the guidance of SEC policies, the core of these reforms was "to increase the quality of students, develop the personality of individuals, reduce the onerous study load of students, and improve the quality of learning" (Chu, 1993, p. 1). In order to achieve these goals, the reform plan pointed out that the existing structure of the curriculum required readjustment.

The new curricular structure was to have three main components: required courses; elective courses; and supplementary activities including some extracurricular activities. Table 2.1 shows the subjects and activities in each of the three categories for the Grade 8 curriculum. Table 2.2 shows the changes made in the curricular structure for the nine year compulsory education program in Shanghai. Generally speaking, the number of class periods for some of the required courses such as mathematics was reduced, while the number of periods and the variety of elective courses and supplementary activities was increased (see Table 2.2). In addition to the changes in the distribution of lessons in each of the three major components of the curriculum, the distribution of lesson periods among the various subjects also shifted for the nine year compulsory education program. Table 2.3 illustrates the changes among the "core" courses, "knowledge" courses (including geography), and "skills" courses by comparing the new Shanghai plan with the SEC unified plan that came with the nine year compulsory education law. These adjustments were intended to reduce the students' study loads, and allow them to have more time to develop their own interests. Table 2.3 also indicates that although the proportion of teaching periods for subjects, such as Chinese, mathematics, and Social and Natural Sciences have decreased, together they still comprise, by far, the greatest proportion of the curriculum. In a broad structural sense then, these adjustments formed the initial response to the centrally dictated educational reforms.

In addition to the structural changes to the nine year compulsory education program, there were also numerous curricular reforms in the three senior years of

secondary school. Generally speaking, senior secondary school was divided into three streams in Shanghai: arts; sciences; and vocational. The first two were to prepare students for university entrance, while students in the vocational stream were to study either in technical schools or go into the work force after graduation. Geography was a required course in Grade 11 for all three streams, and was an elective course offered in Grade 12.

Table 2.1

Junior Secondary School Grade 8 Curriculum
(Subjects and Activities)

Required	Elective	Supplementary
Citizenship Chinese Math Foreign Language History Geography Physics Physical Education Music Fine Arts Technical Work Computer Science Career Guidance	Determined by individual schools	Team & Individual Sports Organized Activities: Social Investigations and Field Trips Reading Self-Study Extra-Curricular Activities

Source: Adapted from: Shanghai Curriculum and Teaching Materials Reform Committee (1990, p. 27).

Table 2.2

Changing Distribution of Lessons in Nine Year Compulsory Education in Shanghai
(Lesson Periods: 45 minutes)

	Pre-Reform	New Plan	Change
Required	9120	7792	-1328
Elective	0	170	+170
Supplementary	2852	3384	+532
Total	11972	11346	-626

Source: Adapted from: Wang (1990b, p. 50).

Table 2.3

Percentage Distribution of Lessons by Subject Area for Nine Year Compulsory Education: China (SEC) and Shanghai (%)

	Core			Knowledge		Skills	
	Chinese	Mathematics	Foreign Language	Social Science	Natural Science	Recreation and Sports	Technical
China(SEC)	27.9	19.0	6.4	11.7	9.2	21.4	4.4
Shanghai	25.8	15.8	8.8	10.2	7.4	23.2	8.8
Change	-2.1	-3.2	+2.4	-1.5	-1.8	+1.8	+4.4

Source: Wang (1990b, p. 53).

The broad structural changes in the curriculum proposed in the Shanghai plan established the context for the more specific processes of change in each of the subject areas which comprised the second major phase of reforms in Shanghai.

Phase 2: Preparing the Teaching Plans and Teaching Materials for the New Geography Curriculum

The second phase in the reform process was to determine the course plans and prepare teaching materials for all subjects, both primary and secondary. This phase commenced after the Shanghai curricular reform plan was approved in August 1989 and was divided into three periods. Period one of this phase (from August 1989 to August 1990) focused on preparation of the initial course plans and draft teaching materials. Editorial boards for each subject were established to produce course plans. After evaluation and approval from supervisory boards for each subject, the editorial boards began to work separately on the various aspects of the new textbooks and other teaching materials. These materials were to be completed and made ready for trial at the beginning of the 1990 school year. Period two (from September 1990 to August 1993) was for trials and revisions of the new teaching materials. Drafts of the teaching materials for each subject (mainly textbooks) were introduced experimentally at selected schools. Suggestions and other feedback regarding the new materials were forwarded to the editorial boards who considered them and undertook revisions accordingly. The third period (from September 1993) marked the beginning of the introduction of the new course plans and teaching materials.

The reform teams for the primary and secondary school geography curriculum, including the supervisory and editorial boards, consisted of personnel from the Shanghai Teaching Resource Office, the Geography Sections of the Shanghai Education Bureau and the Xuhui District Education College (a district level branch of the Shanghai Education Bureau responsible for local professional development of teachers). Those who were

responsible for drafting the curricula (the editorial board) were university professors, local educational administrators, and local publishing houses. The geography editorial board included several groups of people responsible for preparing an array teaching materials, such as textbooks, teachers' reference books, maps, and students' exercise books. Two professors from the Teaching Methodology Research Institute of East China Normal University, along with one professional development specialist from the Xuhui District Education College and two others from the Shanghai Education Bureau, were responsible for compiling and editing all the geography textbooks for secondary schools in Shanghai. Some of the work for developing geography teaching materials, including textbooks and supplementary materials, such as maps, exercise books, and teachers' reference books, commenced as early as 1988, pre-dating the completion of the Shanghai curricular reform plan. The materials developed and introduced during this interim period served as a bridge for the transition from the former to the new curriculum.

One of the first steps in the process of developing the new curriculum was to collect opinions about the existing syllabuses and teaching materials, and suggestions for the new course plans and other materials from administrators, school teachers, students, and parents. The information, opinions, and suggestions were gathered through interviews, questionnaires, and symposia. All of these materials were discussed and analyzed by the editorial board. Then the compilers worked out a new course plan for each grade. After several revisions, course plans were submitted to the Shanghai Supervisory Committee. Following examination and approval, the editors of each subject began to write new teaching materials. From 1991 to 1993, textbooks for Grades 6, 7, and 8 geography were finished respectively.

Xuhui, an urban district of Shanghai, was selected as the location for the experimentation and trials of the new geography course plans and new textbooks. Other districts throughout the city selected only one or two schools to participate in the trials. There were a total of 22 schools throughout Shanghai experimenting with the new

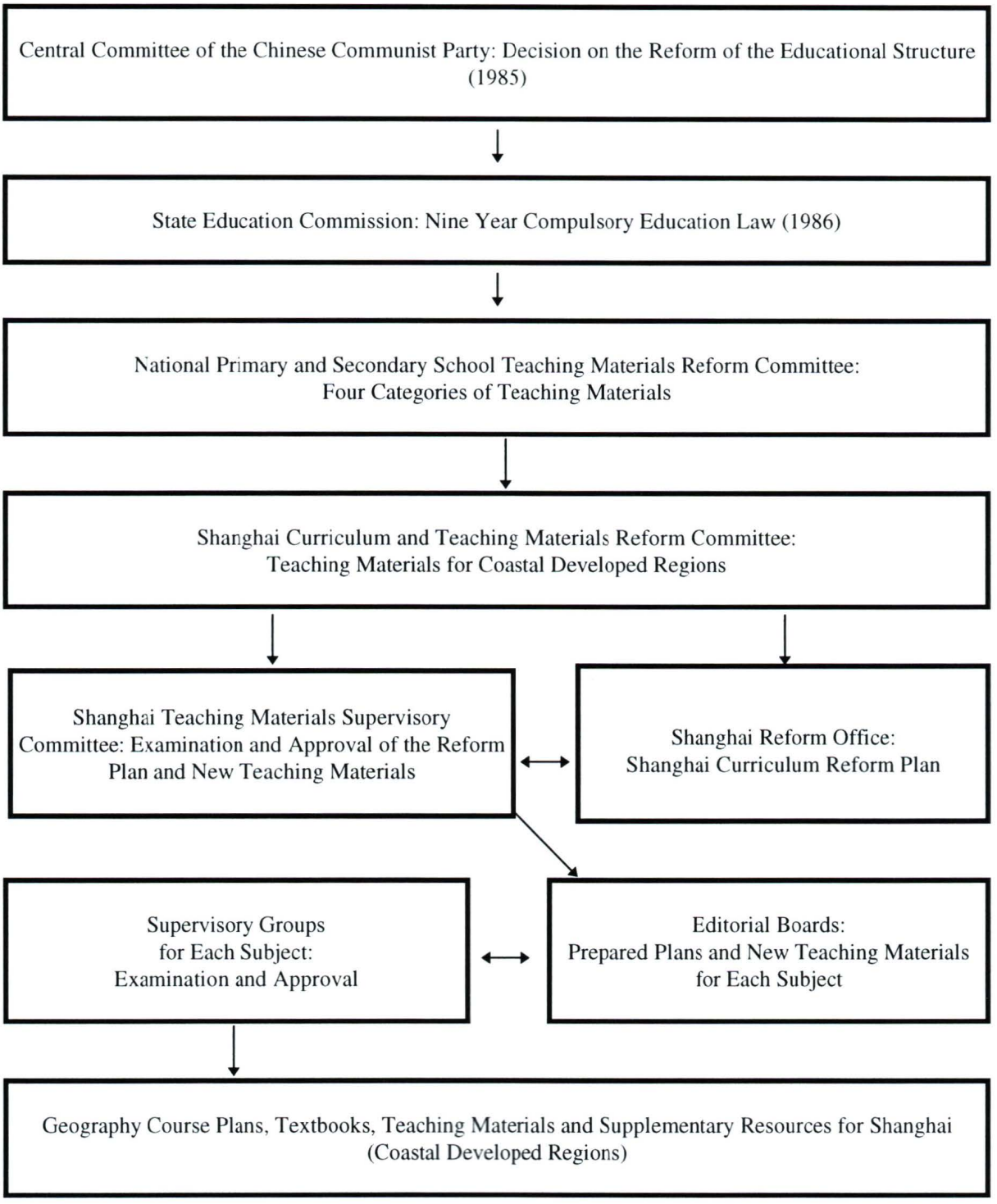
materials. Xuhui District was responsible for directing the trial work for the new geography curriculum in each of the 22 schools throughout Shanghai. Supervised by the Geography Section of the Xuhui Education College, some local teachers were organized into a study group. They were responsible for producing the teaching plans for each lesson based on the new curriculum, which would then be distributed to all the experimental schools in Shanghai. Some demonstrations for coping with the new course content were given by teachers in the study group through various model lessons. However, heads of the editorial board rarely participated in the study group's activities, although they were seen to observe a few of the model lessons. During the experimental period, the compilers, based on suggestions from teachers and students, revised the textbooks accordingly.

Review of the Process: Some Preliminary Issues

Figure 2.1 illustrates the interrelationships among the major organizations and their basic tasks in the production of the Shanghai Curriculum Reform Plan and the development of the changes in the geography curriculum in Shanghai. There are several aspects to the structure of this framework of change which need to be highlighted. The first relates to the rather hierarchical top-down structure of this framework. The plans for reforms and the development of the new geography curriculum, which were the end product of this process, were rigorously pursued under a rather formal set of imposed structures. As will be demonstrated more clearly in the next chapter, measured in these terms, many of the outcomes were highly successful. Yet, it is also clear that at least two other fundamental issues were not explicitly addressed. The first relates to the apparent lack of any sort of system of evaluation at any of the stages or at any level of this process to determine whether or not the goals of the reform plan have been achieved. The second, and perhaps even more important point, is that nowhere in the process was there any evidence of a meaningful comprehensive plan for the "grass-roots" implementation of the

Figure 2.1

The Educational Reform Plan and
Development of the New Geography Curriculum in Shanghai



new curriculum. These oversights have created many problems for the implementation of the new curriculum in general, and for teaching practice in particular. The underlying reasons for some of these problems will be discussed in the next chapter. For now, it is necessary to elaborate in some detail upon the processes of implementation of the new geography curriculum in Shanghai.

Implementation of the New Geography Curriculum

Dissemination of the New Curriculum

In the summer of 1994, specialists from the Geography Sections of all the district and county education colleges throughout the city attended the first meeting hosted by the Shanghai Education College to study the new course plans and textbooks. District and county level colleges directly supervised local teachers and were responsible for addressing specific teaching concerns and other practical day to day classroom issues. Meanwhile, the Shanghai Education College supervised the district level specialists and served as a link to the Shanghai Education Bureau, directing the implementation of major policies and reforms and more general professional development programs. The first meeting referred to above was followed by several others throughout the remainder of the 1994 school year. The main purpose of these meetings was to discuss the implementation of specific changes in the geography curriculum, particularly with respect to the new textbooks. As part of this process, teachers involved in the trials in Xuhui District were called in to introduce their experiences in coping with the new textbooks. Some teaching demonstrations were also conducted, mainly focusing on the teaching plans and teaching methods for certain topics. Despite the strong official push for curricular reform, however, one person from the geography editorial board came only once to any these meetings to introduce the changes, and then only in a very general way.

The dissemination of the new geography curriculum to teachers at the school-level started at the beginning of the 1994-1995 school year. Teachers' initial contact with the new curriculum and related materials occurred during the regular meeting times scheduled for local geography teachers' professional development at the district education colleges held every other Thursday afternoon. The No. 2 Middle School attached to East China Normal University and the No. 2 Chaoyang Middle School in Putuo District were selected to be trial sites for the new curriculum. There were only two teachers in these schools who experimented with the new geography textbooks both at the junior secondary level. Both were asked at the meetings to introduce the methods they utilized for teaching certain topics, such as how they used the maps in the textbooks or atlas to illustrate certain issues, to the geography teachers from other schools in Putuo District. At these so-called "collective preparation" (*jiti beike*) meetings, no supporting materials regarding the changes in the geography curriculum and teaching materials were distributed. Moreover, no one from the editorial board ever appeared at any of these collective preparation meetings.

In addition to the verbal introduction, district educational specialists organized teachers to observe demonstration lessons by the trial teachers and others, to provide some examples of how to overcome difficulties regarding the presentation of certain content that emerged in teaching. The main task of the educational specialists in each of the district education colleges was to assist practicing teachers to cope with new teaching materials. They acted as mediators between those designated by the Education Bureau to develop the new curriculum and school teachers.

Unfortunately, by the second term of the 1994-1995 school year, the time allocated for such preparation was utilized instead for the collective preparation for the city-wide geography graduation examinations and other activities, including a knowledge contest on environmental protection. Neither teachers nor the district educational specialists were too concerned about the needs associated with the effective

implementation of the new textbooks. Ultimately, teachers were largely on their own, doing whatever they could in terms of how to utilize the new textbooks. They received little support from either their colleagues or district level educational specialists. Apparently, teachers were required to implement the new changes with little conceptual, psychological, or pedagogical preparation. Meanwhile, since certain materials, including some of the teachers' reference books, had not yet been completed, the new course plans and textbooks for senior secondary schools remained in the trial phase until the Spring of 1995.

The individuals and their respective organizations involved in the process of implementing change in the geography curriculum in Shanghai can be classified into three broad categories. The first was a small number of people (perhaps fewer than 50) who actively supported the changes and were most directly involved with the development of the new curriculum. This group was comprised of those involved with the development of the reform plan and the new geography texts and supporting materials. The second category, including a few individuals from the first, consisted of those teachers, local administrators, and district and Shanghai level supervisory staff involved with the experimentation and trials of the newly developed teaching materials. Though this category was slightly larger than the first (perhaps 50 or 60), it was still a relatively small group. The largest category by far consisted of all the geography teachers (about 900 across Shanghai), school level administrators and staff, district level geography specialists and others who, while not in any way directly involved with the development of the reform plan and the curricular changes that resulted, were required to implement the new geography curriculum. Clearly the response of this third category to the changes has had (and continues to have) the greatest impact on the outcome of curricular reforms. Generally speaking, however, most teachers remained ambivalent about the changes.

Problems with the Implementation of the New Geography Curriculum

Several reasons can be identified which explain why teachers have such an attitude. First, from a historical point of view, secondary school teachers in China have rarely been asked to participate in the development of curriculum and teaching materials. They were primarily viewed by the bureaucracy as new policy receivers as was reflected in the process of curriculum development in Shanghai. From the example of the teachers' study group in Xuhui District mentioned above, however, we know that this "receiver role" was changing somewhat, if only to a very small degree. Yet, it is also clear that most teachers participating in the experimental process were there only for "representational consent" to various proposals. As a result of this, and in the context of the often traumatic vacillations in educational policy and change many teachers had endured, most felt isolated from the recent process of reform.

One of the many underlying problems linked to this alienation arises from the remuneration levels of teachers. Despite the many successful aspects of economic reforms in China, teachers still receive relatively low pay. Moreover, compared to their colleagues in similar fields, teachers have for many years been among the most poorly paid (Cheng, 1990, p. 120). In Shanghai, for example, the income of a secondary school teacher was comprised of two components. The first, from the Shanghai government, was established by rank. The second, which used to be treated as "bonus pay" (*jiangjin*), but which comprised roughly half of a teacher's salary, was paid by the school. This amount varied and was calculated based on several factors including experience, subjects taught, teaching load, administrative duties, grade(s) taught, student achievement on exams, and so on. Thus, older department heads teaching a large number of senior level classes in the "core" subjects with bright students received higher pay.

Under this scheme, geography teachers were at a particular disadvantage for several reasons. Geography was not considered a "core" subject (even though it was required), there were fewer lesson periods, geography was taught primarily in the lower

grades, and the structure of the system of exams was such that students were not compelled to excel in geography. As a result, the school-based component of geography teachers' pay was relatively lower than other teachers', even though they might have similar qualifications, experience, and abilities. This, in combination with the ease of transition to new opportunities outside teaching, resulted in a large number of geography teachers "jumping the trough" (*tiao chao*) out of the profession.

Many of those who remained, supplemented their income by agreeing to teach more lessons across several grades. Table 2.4 gives an example of the weekly teaching load of one geography teacher in a junior secondary school in Shanghai. This first rank geography teacher taught fifteen geography lessons across three grades every week during the first term of the 1994 school year. In addition, he was responsible for a morning reading class three times a week. He was also responsible for the program of student self-study in his school five times a week during the lunch break. This latter period was utilized to help students resolve any questions relating to their geography courses. In addition, several hours of professional development were scheduled each week.

Overlapping with the busy schedule shown in Table 2.4, such teachers were also required to cope with the new changes to the geography curriculum. As this example demonstrates, teachers in China had to perform multiple roles: as subject specialist, as disciplinarian, and sometimes as administrators. These multiple roles and difficult working conditions constrained the teachers in attempting to fulfill the intended aims of the new curriculum. While the rationale and objectives of change were perhaps sound, most teachers failed to see how the reforms would result in a change in their actual priorities and practice of teaching. Taken together, these issues begin to help us understand why so many teachers were deeply ambivalent about the new geography curriculum and supporting teaching materials.

Lack of adequate information and training programs to prepare teachers for implementing curriculum changes also helps to explain the current difficulties with the

Table 2.4

Example of a Junior Secondary School Geography Teacher's Weekly Timetable

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning Reading (0720-0740)		Grade 6 Class 7	Grade 6 Class 6		Grade 6 Class 8	
1 0800-0845	Grade 6 Class 8	Grade 8 Class 1		Professional Development		Professional Development
2 (0855-0940)			Grade 7 Class 2		Grade 8 Class 1	
3 (0955-1040)	Grade 7 Class 1	grade 7 Class 3	Grade 6 Class 6	Shanghai Education College	Grade 8 Class 2	Shanghai Education College (Periodically)
4 (1055-1135)	Grade 7 Class 3					
Self-study (Lunch Break)	Grade 6 Class 7	Grade 6 Class 8		Grade 6 Class 6	Grade 7 Class 3	Grade 8 Class 2
5 (1315-1400)	Grade 6 Class 7	Grade 8 Class 2	Grade 7 Class 5	Geography Teachers' Professional Development District Education College Every Second Thursday		
6 (1410-1455)		Grade 7 Class 2			Grade 7 Class 1	
7 (1510-1555)	Grade 7 Class 5					

Source: From field notes

reforms. In the mid-1980s, along with a ranking system, professional development programs were established for practicing teachers across all of China. At that time even teachers with no formal university training were able to achieve higher ranking simply because they had worked in the teaching domain for a long time. The goals of the new training programs were to offer some pedagogical theory for such teachers, including training in teaching methodologies and educational psychology. Geography teachers could study geographical education and geography teaching methodologies through these programs.

While upgrading programs for certain ranks of teachers were discontinued in the late 1980s in Shanghai, some of the underlying characteristics of such efforts were still evident in the more recent professional development programs. This was perhaps most clearly illustrated by the continued emphasis on theory rather than on practice. For example, the professional training syllabus for first and second rank teachers in the Shanghai Education College in the subject of geography included:

1. Study of Teaching the Geography of Shanghai.
2. Study of Teaching Human Geography in Senior Secondary School
3. Research Methodology in Geographical Investigation
4. Population and Resources

The professional training syllabus for special rank teachers included:

1. Tentative Study in the Psychology of Geography
2. Identification of Remote Sensing Images
3. The Use of Systematic Theory in Geography Teaching
4. Research Methodology in Geographical Investigation

While replete with references to "teaching", there was actually little or no content offered to help teachers cope with the practical aspects of implementing the new geography curriculum and textbooks. One general characteristic of the new geography textbooks, for example, was to avoid attending to each and every aspect of particular topics or regions. Therefore, teachers were required to search for supplementary teaching materials of their own to help explain certain geographical phenomena. Many teachers, however, were not

adequately prepared for this work. They were used to "teaching by the book" or by following the teaching models of other teachers. In general, they did not have the skills necessary to do research beyond the prescribed textbooks, let alone create any supplementary teaching materials. Thus, many teachers complained that the content of the new geography textbooks was only a "skeleton" (*gu jia*) with no "meat" (*rou*).

The final section of this chapter will review and evaluate the major issues which arise from the preceding discussions on the development and implementation of the new geography curriculum in Shanghai in the context of the various models of educational change discussed earlier.

Summary: Curriculum Change in Shanghai and a Comparison with the Conventional Models

The above discussion of the processes of geography curriculum development and implementation in Shanghai have revealed many differences compared to the conventional (Western) models of curricular change. It is clear from the literature briefly reviewed at the beginning of this chapter that curriculum change in general is placed (perhaps not always firmly) in the context of some theoretical framework that attempts to identify and model processes and practices for its implementation. Thus, although not always explicitly stated, processes of curriculum change occur within some kind of conceptual framework. In China, while curriculum workers desire and recognize the need for change, there is no apparent meaningful conceptual base or framework for achieving the goals of such change. Although some efforts were made in the reforms to the geography curriculum in Shanghai to place change in some theoretical context, they were not strongly linked to the processes or practice of change evident in the models reviewed here. Moreover, such attempts were most often reduced to a cursory review of usually outdated

non-Chinese concepts and a search for the subject matter content taught in foreign educational systems.

While the conventional models of curriculum change tended to be grass-roots oriented, in China such change was very clearly "top-down" in terms of organization and administration (see Figure 2.1). Curriculum committees consisted mainly of a number of university professors and some educational administrators. Few practicing school teachers were involved in the determination and organization of change, and such participation that did exist was usually very limited. Moreover, while some teachers were asked to investigate the use of some new curriculum materials, they were not at all involved with the actual preparation of course texts and supporting resources.

Conventional theories highlight the importance of the central role of teachers in the process and practice of curriculum implementation. In contrast, the teacher's role was not as seriously considered in China. This was in part linked to the lack of highly qualified, well trained, professional and skillful teachers. In addition, there was really no incentive for teachers to participate in any meaningful way. This outcome was a by-product of the structure of the curriculum development process wherein teachers were viewed simply as curriculum receivers. The developed curriculum was thus down loaded onto teachers with only minimal consideration of their role in the process of change.

This process of curriculum change, according to the conventional models, should be fundamentally linked to the purpose and rationale of change. Understanding the need for change is one of the preconditions for effectively implementing such change. The purpose of change in China was most often captured in slogans and policy pronouncements. For instance, the purpose of curriculum change in Shanghai was to "increase the quality of students, develop the personality of individuals, reduce the onerous study load, and improve the quality of learning" (Chu, 1993, p. 3). While such slogans were perhaps laudable, most teachers failed to perceive the practical relevance of such statements. As a result, teachers could not see how this would result in a change in

their priorities and practice of teaching. Publicly, teachers were obliged to mouth the rhetoric of change, but in private they complained "don't give me change, give me a map [and other materials] to teach".

The models reviewed in the first part of this chapter were also concerned with the attitude and mind-set of participants, especially of teachers. Implementing change in this context was an open process. It allowed for a range of inputs, often for consensus and collaboration. However, implementing curriculum change was apparently a much less open process in China. Since change was largely determined from above, the structure and organization of change did not readily facilitate constructive debate and the accommodation of alternative viewpoints. Curriculum workers "must" achieve consensus and "unified agreement " to implement change in China. Individual perspectives contrary to the so-called "collective view" were compromised to achieve unanimity.

The Chinese practice of implementing change also raises other issues that do not conveniently fit the conventional models. Elements, such as tempo, timing, practice, activities, alternatives, adaptation, and adoption, by their very nature, cannot be predetermined in the process of change. Tempo and timing, in China, were not even perceived in the same way. The "schedule" of changes in the geography curriculum was largely predetermined and offered little room for flexibility. Linked to the fact that teachers were not intimately involved with the process of change, there seemed to be little in the way of determining the activities and alternatives regarding the adaptation and adoption of change. Moreover, curricular development in China was primarily content based. The processes and practices of implementing curriculum change focused almost exclusively upon course content which, in the Chinese context, was virtually synonymous with the prescribed textbooks.

Implementation of educational change in the conventional wisdom was said to have three overlapping central dimensions, including content and supporting resources of the curriculum, innovative methods and approaches to its instruction, and the possible

alteration of underlying pedagogical, policy, and program beliefs (Fullan, 1991). Analysis of the geography curriculum reforms in Shanghai has revealed that change tended to focus, quite successfully, only on the first dimension. However, as will be demonstrated in the following chapters, "traditional" teaching methods were still widely utilized.

This comparison suggests that the conventional wisdom of established (Western) theories, which conceptualize and model the processes and practice of curricular change, do not seem to adequately accommodate key features of the educational reforms observed in China. Elements of the circumstances of reforms to the geography curriculum in Shanghai have been introduced which clearly do not fit these conventional models. Thus, in order to understand and explain the situation of Chinese teaching practice, the nature of curriculum development needs to be more carefully considered. As with school systems elsewhere, curriculum, textbooks, and teaching practice in China are interrelated. The unique characteristics of curriculum development and implementation in Shanghai discussed in this chapter have set a foundation for further exploration of these interrelationships. The next chapter will investigate in more detail the links between the curriculum, textbooks, and teaching practice, focusing in particular upon textbooks and teaching practice in the geography class.

CHAPTER III

The New Geography Textbooks and the Impact on Teaching Practice

The Chinese term for curriculum is "*kecheng*" which "carries with it a strong literal sense of a course, or something to be achieved at the terminal point of learning" (Leung, 1991, p. 74). One important feature of the Chinese perception of curriculum, as Leung indicates, was the emphasis on content rather than upon other key curriculum elements, such as objectives, teaching methods, and assessment. As was discussed in the previous chapter, the production of curriculum materials, especially textbooks, was exceptionally important in the process of curriculum development in China. From many Chinese teachers' point of view, teaching materials were synonymous with textbooks (*jiaokeshu*). Particularly in China's poorer regions, textbooks were often the only resource that teachers had. Thus, the importance of textbooks to teachers even superseded the curriculum guides. If one asked teachers to show their school curriculum, they would immediately take out their textbooks. Since textbooks in China were perceived to embody the curriculum, it was largely these texts to which teachers responded and needed to use in the practice of their teaching. Therefore, in order to determine the effectiveness of the new curriculum in terms of teaching practice, it was important to begin with an examination of the new textbooks.

The characteristics of Chinese curriculum development in terms of its top-down structure and central control have been clearly illustrated in the previous chapter. As a result the centrally dictated mandate of educational change has been vigorously pursued from above. This chapter will introduce one of the main products of this change, the new geography textbooks, and examine their impact on teaching practice. Four main sections are included. The first will discuss the relationship between geography teaching methods

and textbooks based on the Western literature. The second will focus on the changes in new geography textbooks in Shanghai. The third will discuss the impact of the new textbooks on teaching practice based on an analysis of the data collected during the fieldwork. A comparison of the main elements highlighted in the Western literature and the situation in Shanghai will be undertaken in the final section of this chapter.

Literature Review: Geography Teaching Methods and Textbooks

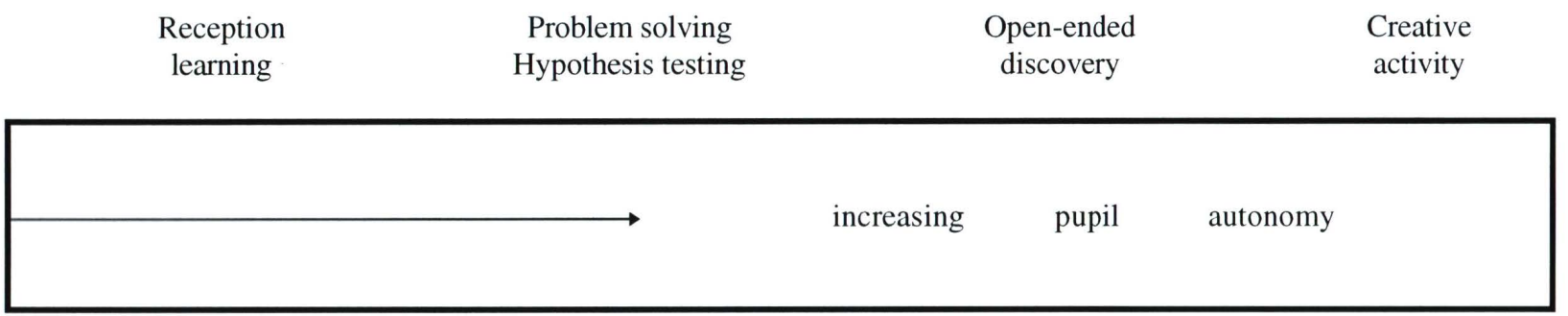
The teaching of geography can be undertaken by utilizing a range of classroom methodologies to be selected by teachers based upon the objectives of teaching and learning (Rawling, 1986). Many have also demonstrated that students will learn more and behave better in the classroom if teachers use instructional approaches appropriate to the goals of learning and student's needs (see Boardman, 1986). This approach to the teaching of geography (largely applicable in other subjects as well) is captured in Figure 3.1 which illustrates that different teaching and learning approaches can be placed along a continuum of the level of student autonomy.

The diagram indicates that teachers' exposition and narration, and students' reception-learning occupy one extreme of the continuum characterized by a relatively low level of student autonomy associated with lower order cognitive skills. Moving along the continuum, other possible teaching strategies and learning activities are identified, such as close direction of question analysis and problem solving. At the opposite end of the continuum, encouragement and support is given for creative activities that utilize higher order cognitive skills. The diagram illustrates the link between teaching approaches and learning activities and suggests that there are direct implications for the outcome or end product of such approaches and activities. It also incorporates the notion that students may never have the opportunity to practice skills such as decision-making or

Figure 3.1

The Teaching-Learning Continuum

STUDENT LEARNING ACTIVITIES:



TEACHER ACTIVITIES:

Source: Adapted from Rawling, (1986, p. 60).

planning their own program of work if they spend all their time receiving knowledge in a relatively passive way from their teacher. Similarly, if students were always following their own individual inquires, they would never be introduced to particular pieces of geographical knowledge, and might never have the opportunity to distill important ideas from a well presented lecture (Rawling, 1986). The important point here is that geography teaching needs to establish a balance between the outward-looking expedition of student self-discovery and the more conventional teacher directed exposition of the geographical world.

Therefore, geography teachers should incorporate a variety of instructional approaches which involve a range of student activities in the learning process (Roberts, 1986). Linked to this process as a prerequisite for learning is student motivation. When students are more motivated to learn, there is an increased capacity not only to absorb geographic knowledge, but also to utilize that knowledge in ways more sophisticated than just remembering it (Lyman & Foyle, 1990). If teaching methods are chosen carefully, such motivation can be stimulated. Cooperative learning is an example of one teaching method that can be utilized in the geography classroom to stimulate motivation and the students' capacity to learn.

Slavin (1990) points out that cooperative learning is a specific methodology based on learning principles relating to how individuals learn within groups. It is a teaching strategy that promotes the positive interaction of children in small groups. Small groups might, for example, consist of three or four students with different levels of achievement and varying backgrounds, status, gender, and geographical knowledge. Under the right conditions, learning processes would promote student motivation, build group skills, foster social and academic interaction among students, and reward successful group participation (Lyman & Foyle, 1990).

While numerous cooperative learning models have been developed (see especially Johnson & Johnson, 1994; Johnson, Johnson & Holubec, 1993; Lyman & Foyle, 1990;

Slavin, 1990), several common themes emerge that are relevant for the discussion here. The first and most obvious is that the teaching process is focused on students and their involvement in learning activities. Secondly, the role of teachers, while clearly still important, is to act as a guide on the side instead of being the dominant participant in classroom activities. Teachers are there to help uncover materials, ideas, and concepts with students rather than to do it for them. Under these circumstances, students would have the opportunity to practice higher order thinking skills, decision-making, and social interaction skills while becoming more creative. In addition, the importance of understanding the needs of students is also evident in these models of cooperative learning.

The literature also indicates that good questioning can stimulate students' motivation, and appropriate questioning would help to improve students' thinking skills. "Most geography teachers often break up their talk with question and answer sessions" (Roberts, 1986, p. 69). Moreover, as Dantonio (1990) points out, central to instruction aimed at the learner's cognitive development, is the conscious and skillful efforts of teachers in assessing and developing learners thinking skills. The role of questioning is crucial, and the method of asking questions is by far the single most influential teaching act. Questioning can be arranged to create stepping stones for the transition from one mode of thinking to another or for the formation of new conceptual schemes (Taba, Levine & Elzey, 1964).

There are two dimensions of questioning that need to be considered . One ranges from factual recall to hypothetical thinking, and the other gives an indication of how much scope teachers are giving students. However, as Roberts (1986) claims, although present curricular objectives may emphasize comprehension, analysis, and developing hypotheses rather than memorization, "the message that teachers [most often] convey in questioning is that memorizing knowledge is of overriding importance" (p. 69). Geography teachers are therefore encouraged to use open-ended questions rather than closed (which usually have

only one acceptable answer). Open-ended questions also allow students to put into words what is in their own minds rather than attempting to guess what is in their teacher's mind. In addition, open-ended questions enable students to make their own sense of new knowledge and interpret in light of what they already know. Moreover, such questioning will lead to exploratory talk and a much greater willingness on the part of students to participate.

Some studies in English speaking countries have revealed that geography teaching in secondary schools in the past was dominated by the desire for students to gain mastery of a wide range of factual information (almost solely for examination purposes) through traditional chalk, talk, and textbook approaches (Maccoll, 1984). Although this chalk, talk, and textbook approach to teaching and learning has not disappeared and is still a valid mode of teaching and learning, it is only one of an increasing number of approaches to facilitate learning. Geography teaching in Canadian and British schools, for example, has undergone many changes including increased emphasis on inquiry learning , skills development, and incorporation of field studies as an integral component of the curriculum. Case studies, games, and simulation have also been introduced into the repertoire of activities in geography classes. These all reflect a movement towards student-centered teaching and learning. Closely associated with the changes in geographical teaching methodologies and curriculum is the increasing variety of resources being utilized, both by teachers and students. Many have demonstrated that although a single textbook may still be the focus in some programs, the tendency has been towards the use of multiple resources--both within and outside the classrooms (Maccoll, 1984).

While under most circumstances teachers have the opportunity to select from a variety of learning resources, work from Anderson (1984) shows that classroom methods are most frequently based on textbook materials. However, while the advantages of utilizing textbook-oriented teaching methods were widely acknowledged, they tended to lead to teacher-centered rather than student-centered classroom activities (Anderson,

1984). It was most often the teacher who set the parameters for decision making and interpretation of data based on the text materials. In order for students to develop skills in decision-making and data analysis, on the other hand, they must participate in the establishment of these parameters, the formulation of problems, and follow-up activities through simulations and model building (Hajdu, 1977). Geography teaching that largely relied on textbooks did not encourage students to develop the interpretative skills necessary for success in the secondary geography classroom (Anderson, 1984).

Another study from Britain has further demonstrated that for many teachers the presence of a single textbook offered "security" and ready access to text related activities to occupy a restless class (Lidstone, 1985). Following the structure provided by the author(s) of such texts, teachers tended to feel that they were "following a course of study for which they were not, ultimately, responsible" (Lidstone, 1985, p. 387). Such teachers treated the textbook as a syllabus guide or a source of complete studies on various topics. For other teachers, in the same study, the textbook was there only as a backup. These teachers employed the text to supplement their own interpretations of the nature of the subject, utilizing whichever books or sections may be appropriate, regardless of the specific structure of geographical knowledge or the teaching style suggested by the author of the book (Lidstone, 1985, p. 387). In all cases, most teachers considered the textbooks as a major source of inspiration, content information, and teaching resources.

Although practical circumstances in the geography classroom have frequently led to a reliance on textbooks and the corresponding teaching methods introduced above, geography textbooks were also "generally held in low regard by both teachers and pupils" (Lidstone, 1985, p. 67). Much evidence from other research has also demonstrated that in geography classes students preferred the activities and exercises undertaken other than those based on the textbooks (Lidstone, 1977; Long, 1971). The implication, from the point of view of student needs (and teaching objectives), is that classroom teaching

methods related to the use of any textbook were less interesting and, therefore, probably not as successful as those independent of the text.

Some literature has also highlighted the interrelationships between textbooks (and other resources), instructional approaches and classroom teaching methodologies, teachers, learners, and the structure and content of the curriculum. Many models of geography teaching have suggested that the teaching materials utilized may restrict teachers to particular teaching methods and that the type of resources teachers selected would also affect the outcome of teaching (Fien, Gerber & Wilson, 1984). After all, it was the teachers who interpreted the meaning of the curriculum and who decided what and how to teach in order to meet the requirements of the curriculum and of their students. The selection of teaching materials (textbooks), as suggested in these models, must consider various student needs, teaching and curricular objectives, and the instructional approaches that best fulfilled these criteria.

Interestingly, very little has been written specifically on the relationship between geography textbooks and teaching methods. Perhaps, it was commonly assumed that teachers would also use other materials in their teaching. This brief review of the existing literature regarding the role of textbooks in some English speaking countries has revealed the underlying concepts regarding instructional approaches and provided examples of certain classroom methodologies which highlight common desirable elements in the teaching of geography. It also allows us to draw several inferences about the impact of textbooks on geography teaching. Textbooks tended to restrict classroom instruction to teacher-centered approaches if they were heavily relied upon in the class. However, teachers were not always necessarily bound to such texts. It is clear that the range of methodologies which teachers may employ depends in part upon the kinds of teaching materials they have at their disposal. It is from this general perspective that the next section of this chapter will examine the nature of the new geography texts in Shanghai and their role in classroom teaching methods.

The New Shanghai Geography Curriculum

Textbooks in China were essentially the only resource available to most teachers. Therefore, understanding the content and structure of the textbooks is critical to understanding their influence on teaching practice. This section will examine the characteristics of the new geography curriculum and the way in which it was embodied in the new textbooks to provide a sense what geography lessons were like in Shanghai. But first, a brief look at the basic classroom circumstances into which the new curriculum was introduced.

Classroom Circumstances in Shanghai

Secondary school students in Shanghai attended classes Monday through Saturday morning. Sunday was the one full day off each week. The school day usually began at around 7:15 a.m. with early reading and the first lesson beginning at 8:00 a.m. There were seven 45 minute lessons during the school day--four in the morning and three in the afternoon--with 10 to 15 minutes between each for recess and twice daily eye exercises and about 90 minutes for lunch. Formal classes ended at about 4:00 p.m. Although students did not have classes on Saturday afternoons, they were usually expected to participate in extra-curricular activities scheduled at this time. Secondary school students like other students in China, had numerous regular holidays including a two month summer break and a four to six week holiday during the Spring Festival (Lunar New Year) in late January or early February. Thus, despite the long hours and extra half day in school each week, students in Shanghai spent roughly the same amount of time actually in class as did students in Canada.

The physical premises of schools throughout Shanghai were quite varied. Average schools had basic teaching facilities which might include a small library providing some dictionaries, newspapers, magazines, and other reference books, a small playground, one

simple usually very crude science lab, and so on. While all schools relied heavily on blackboards and chalk, most had little more. Overhead projectors in every class and an array of other audio-visual equipment were largely absent. Certain key secondary schools across Shanghai, on the other hand, had very modern facilities. For example, the No. 2 Middle School Attached to East China Normal University, with preferred funding from the Shanghai Education Bureau and UNESCO, was able to provide teachers and students with fully equipped science and even geography labs, two auditoriums, a gymnasium and sports complex, a large cafeteria, and a residence for the 700 or so students who lived at the school. Such circumstances were extremely unusual however.

The physical layout of classrooms varied from school to school, but students' desks were usually arranged in straight rows most often alternating with boys and girls only in each row. The average class contained 40 to 50 students who remained with their classmates in the same classrooms throughout the school year and where virtually all lessons were taught. Therefore, teachers did not have a classroom they could call their own. Instead, they were based in a departmental office with their subject area colleagues or in an office with other subject area teachers of the same grades. As a result, classrooms assumed no subject area character remaining bare and undecorated since teachers had to carry all lesson materials to each appropriate classroom. Moreover, with no central heating and winter temperatures hovering near freezing in Shanghai, students and teachers had to wear several layers of clothing in the bare concrete classrooms to keep warm. It was these classroom circumstances which provided the backdrop for curricular reforms in Shanghai.

Structure and Organization of the New Curriculum

According to the new Shanghai Curriculum Reform Plan, basic geographical knowledge was to be introduced in the General Knowledge course taught from Grades 1 to 5 and in the Social Sciences course taught from Grades 3 to 5. Geography, as a separate and required subject was taught from Grades 6 to 8, and in Grade 11. The time allocated for geography in each grade was once a week in Grade 6, twice a week in Grades 7 and 8, and three times a week in Grade 11. Table 3.1 illustrates the distribution of geography courses and time periods between the former and the new geography curriculum in Shanghai. By eliminating two lessons per week in Grade 10 and adding one more lesson a week in Grade 11, the total number of required geography lessons that a student would take in secondary school has been reduced 8%. The sequencing of geography courses has also been adjusted as illustrated in Table 3.2. In the new curriculum, World Geography was to be taught before the Geography of China. Environmental Geography, originally taught in Grade 10, was combined with Human Geography and taught in Grade 11. The Grade 12 elective geography course was a general review of all the geographical knowledge taught throughout junior and senior secondary school including World Geography, Geography of China, Environmental Geography, and Human Geography. This course, taken primarily by those students who planned to write the university entrance examination in geography, remained unchanged at the time of writing and will not be discussed in any further detail in this study.

The broad structure of the content of each grade is illustrated in Table 3.3. The content of the new geography curriculum for junior secondary school was arranged from physical to regional, and from the general to the specific. The changes being undertaken in the Grade 11 Human and Environmental Geography course taught in senior secondary school will not be discussed since the development and implementation of the these changes were only at the preliminary trial stage during the fieldwork in Shanghai.

Table 3.1

Distribution of Geography Lessons Per Week in Secondary Schools in Shanghai

	Junior				Senior		
Grade	6	7	8	9	10	11	12 (Elective)
Pre-Reform	1	2	2	-	2	2	3
New Plan	1	2	2	-	-	3	3

Source: From field notes.

Table 3.2

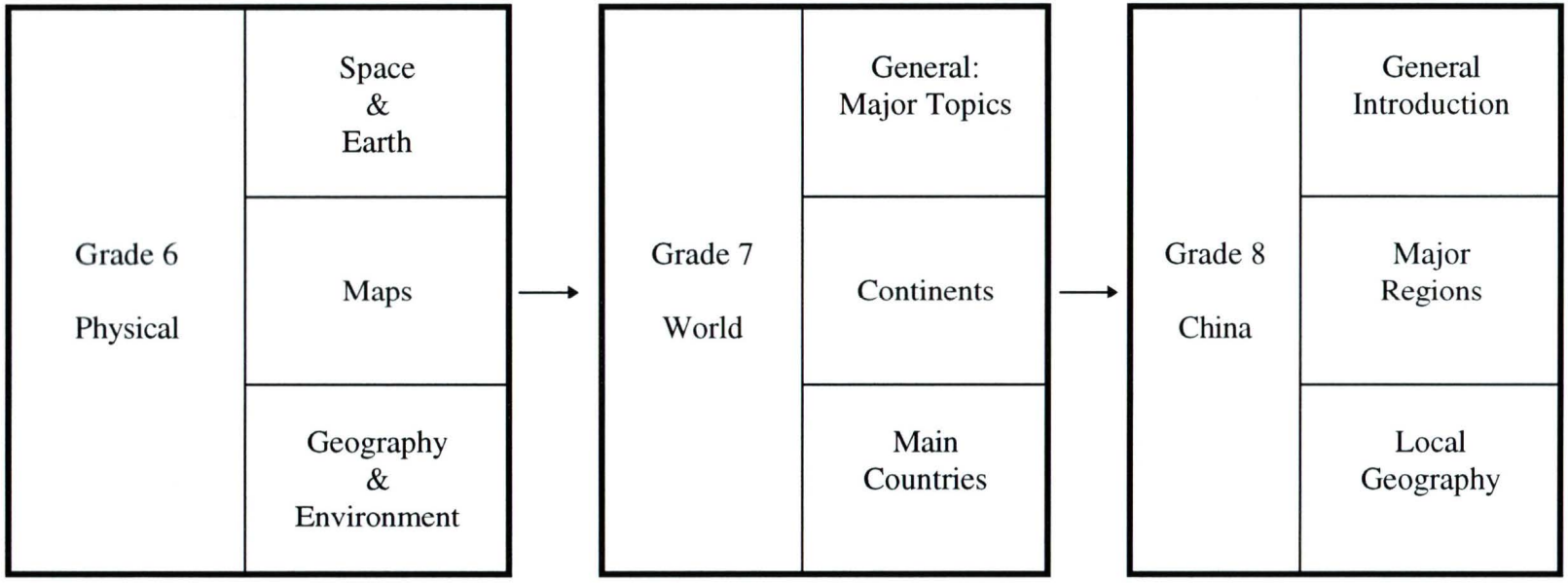
Distribution of Topics in Secondary School Geography in Shanghai

Grade	6	7	8	10	11
Pre-Reform	Physical	China	World	Environment	Human
New Plan	Physical	World	China	-	Environment and Human

Source: From field notes

Table 3.3

Major Content of Junior Secondary School Geography in Shanghai



Source: Adapted from: Chu (1993, p. 2).

In addition to the elective geography course in Grade 12, the Shanghai curriculum reform plan also proposed that some elective courses should also be offered at the junior secondary level. However, primarily due to a lack of adequately trained geography teachers and supplementary teaching materials, the Shanghai geography curriculum reform team decided that the time set aside for elective geography courses was to be used for required "supplementary activities", and in fact, usually appeared as such in the normal school timetable. These supplementary activities were designed to help students develop a greater understanding of certain topics outside of what was covered in the textbooks. This might involve group discussions, presentations, or self-study.

Supplementary activities were also strengthened in terms of the time available and the variety offered in the new Shanghai geography curriculum plan. As part of this effort a book called Geography: Extra-curricular activities was written by some local district level geography specialists and some experienced practicing teachers in Shanghai secondary schools (Cheng, 1993). Other supplementary teaching materials were also under preparation at the time of writing. Teachers who used these supplementary activities could choose from any number of teaching materials based on their own school's circumstances. Supplementary activities in geography were quite common in the junior secondary grades, while very few were offered in the senior secondary grades since students and teachers at that level were often focusing on the graduation and university entrance examinations.

Textbooks and the Content of the New Curriculum

Among all these geography teaching materials, the textbooks were developed first. Except for Grade 6, which had only one textbook for Physical Geography, each of Grades 7, 8, and 11 used two textbooks. There was also one teacher's reference book corresponding to each textbook from Grades 6 to 8. The teacher's reference books for

Human Geography in Grade 11 were still being written in mid-1995. In addition to these books, students had their own atlases and exercise books.

Based on work from Chu (1993, p. 4), and a review of each of the geography textbooks described above, the content of each of the three junior secondary geography courses is summarized below:

Grade 6: Physical Geography

1. Preface
2. Space and the Earth:
   Earth in space and its shape and size; the globe; rotation of the earth and time zones; revolution of the earth and the four seasons; the earth's five zones.
3. Plane Figures and Maps:
   Read and draw plane figures; map reading; methods of presenting land forms on maps.
4. The Earth's Surface:
   Main features; influence of internal and external forces on the earth.
5. Atmosphere:
   Temperature changes; pressure and wind; cloud and precipitation; climate and its resources; and forecasting.
6. Water:
   Oceans; rivers; lakes and the natural environment.

Grade 7: World Geography

1. General introduction of the world's regions:
   Distribution of oceans and land; world climate and natural zones; cultures and countries; oceans.
2. Review of Individual Continents:
   The scope, location, physical conditions and economic characteristics of each continent; emphasis on special topics including the size of Asia; differences between regions; China in Asia and in the world.
3. Countries:
   Russia, USA, Japan; introduction to 20 countries including: England, Canada, France, India, etc.; distinctive physical, and human geography features; introduction to advanced or influential countries with regards to special topics: rubber production in Malaysia; watch and clock making in Switzerland; etc.; introduction to populations, areas, capitals, basic physical and human geographic features of all the countries and regions in the world.

Grade 8: Geography of China

1. General Introduction:
   Location, scope; population and nationalities; landform, climate and weather; resources; water on the land and water resources; land resources; biological resources; mineral resources; ocean resources; tourism resources; agriculture; industry; transportation and trade; cities; environmental protection; natural disasters.
2. Regional Geography:
   China's 10 regions; physical and human geographic features.
3. Local Geography:
   Shanghai's formation and its development; the largest comprehensive industrial city in China; its suburban agriculture and functions; Shanghai transportation and commercial trade; historical and cultural geography of the city; tourism; environmental protection and control; Shanghai's future development.

Analysis of the new textbooks reveals several aspects of the changes to the geography curricula. Perhaps, the most obvious of these evident in the new textbooks is that the amount of detailed information they contained had been substantially reduced. For instance, the sections discussing rain formation along frontal surfaces in the Physical Geography course have been eliminated. In other sections, long introductions to the cities of Xian, Luoyang, and Kaifeng have also been completely eliminated. In the new texts for the World Geography course, rather than introducing individual countries in a regular standardized format in terms of location, territory, population, landform, climate, economy, and so on, the new textbooks divided main countries into three major groups. A different thematic emphasis was placed on each group of countries. In practical terms, this has resulted in the exclusion of large amounts of factual information about each and every country, while other issues and concepts were discussed more thoroughly. A good example of the latter was the examination of the territory and transformation of the former Soviet Union in the new textbooks. In general terms, content and organizational changes in the textbooks reflected a greater emphasis on comprehending topical and regional themes and broad geographical concepts rather than the previous focus on providing as much detail as possible.

The content of the geography curriculum, in terms of the topics covered in the new textbooks, has also incorporated numerous changes in the sequencing within and between the courses. For example, the World Geography course formerly taught in Grade 8 was now taught in Grade 7 within the new curriculum. Other topics, such as Space and the Earth, and Maps, that used to be part of the Geography of China textbooks, have been shifted to the Grade 6 Physical Geography course. While such changes have removed certain materials from the former Geography of China course, there was some question as to whether or not these materials were too sophisticated or inappropriate for pupils in Grade 6.

More detailed analysis of one particular set of changes serves to highlight how the new textbooks have incorporated the objectives of reform. The new section on weather and climate now taught in the Grade 8 Geography of China course is outlined on the right side of Table 3.4. This is compared with the version in the old Geography of China textbook formerly taught in Grade 7 shown on the left side of the same table. Although this chapter still contained four sections, the content and topical coverage of each section has been modified. While the topics of the first two sections in the new textbook remained the same, the specific content of the texts has been revised. The section on frost-free and growing periods has been eliminated in the new textbook. Further, instead of talking about the temperature distribution in different seasons in great detail, the new text emphasized only the main characteristics of the distributions, Although the content and sequencing of topics in the second section remain similar, the detailed materials presented in the new books have been substantially simplified to include only broad generalizations. Specific examples discussed in the old texts, such as the distribution of the annual precipitation in Beijing have been removed. Table 3.4 also illustrates how the topics covered in Section 4 of the old textbook were now divided and expanded into the final two sections of the new text.

Table 3.4

Weather and Climate

Text-book	Former (Chapter 4 of Geography of China) Grade 7	New (Chapter 4 of Geography of China) Grade 8
Title	Climate	Climate and its Resources
Section 1	Temperature and Temperature Zones (1) Winter temperature distribution (2) Summer temperature (3) Frost-free and growing periods (4) Temperature zones	Temperature and Temperature Zones (1) Characteristics of winter and summer temperature Distribution (2) Distribution of temperature zones (3) Characteristics of average annual temperature distribution
Section 2	Precipitation, Dry and Wet Zones (1) Annual precipitation distribution (2) Distribution of seasonal precipitation (3) Annual precipitation change (4) Dry and wet zones	Precipitation, Dry and Wet Zones (1) Characteristics of annual precipitation distribution (2) Distribution of seasonal precipitation (3) Annual precipitation change (4) Distribution of dry and wet zones
Section 3	Key Factors of Climate Change (1) Location (2) Landforms (3) Monsoon - winter/summer monsoon - monsoon activities and rainy seasons in different regions	Characteristics of Climate (1) Complex and varied climate - types of climate - key factors of varied climate (2) Notable monsoon climates - distribution of various monsoon climate regions
Section 4	Characteristics of Climate (1) Main characteristics of climate in China (2) Impact of climate on agricultural production in China	Impact of Climate on Agricultural Production (1) Abundant climate resources (2) High temperature rainfall (3) Unfavorable impact of climate on agricultural production

Source: Based on Chu (1994); Liu (1984)

Another obvious change in the new textbooks was the increase in the number and quality of illustrations. The new Physical Geography textbook, for example, included about 150 illustrations, such as photographs, maps, sectional drawings, sketches, statistical tables, and even satellite images -- many of them in color. Each of the World Geography and the Geography of China textbooks also had about 100 such illustrations. All of these provided students with the opportunity to practice and improve their map-reading and analysis skills. However, there were numerous inconsistencies and inaccuracies among the illustrations and corresponding text both in the new textbooks and the students' workbooks. "Liu Pan Shui", for example, a source base for coal in China, was mentioned in the second volume of the Geography of China textbook, but it was not indicated on any of the corresponding maps. Some illustrations also lacked accurate information or proper explanations, such as the figure showing the "Percentage of the Area Covered by Forest in the World and Some Countries" (see Chu, 1994, p.59). Teachers and students were often confused by these inconsistencies and were not always too sure how to interpret the information presented.

Questions and exercises appeared only at the beginning of each section in the new textbooks and did not cover any of the previously taught material. That was usually left to the student workbooks. Some questions in the textbooks required some map reading, while most others tested students' prior knowledge of the topics at hand and were supposed to encourage open ended discussion as an introduction to the new topics to be presented in class. Other questions related to the kind of geographic matters that students might encounter on a daily basis as a way of increasing students' interest in the topics presented in the class. For example, in Chapter 8 on mineral resources in the Geography of China text, there were three sections. The questions and exercises are shown in Table 3.5. All the questions were designed to arouse students' interest, and to stimulate their motivation for learning. However, closer analysis of these and other similar questions revealed that they largely required the recall or simple utilization of information presented

Table 3.5

Geography of China, Chapter 8: Mineral Resources: Questions and Exercises

Section 1 Characteristics of Mineral Products	(1) In your classroom and your school day, what things are made from mineral resources? Which are from metal minerals? Which are from non-mental mineral resources? (2) Why do people call coal the "food of industry"?
Section 2 Distribution of Metal Ore	Read "The Map of Main Iron Ore Distribution in China", and point out the main iron ore area in Liaoning, Inner Mongolia, Hebei, Hubei, Sichuan, and Hainan.
Section 3 Distribution of Mineral Energy Resources	Read "The Map of Main Coal Distribution in China", and point out the characteristics of the distribution of coal resources.

Source: Chu (1994, pp. 65-71).

in the texts and atlases. More creative exploration or inquiry using these or other data was neither required nor encouraged.

Significantly, changes to the textbooks did not include any sort of reference list or bibliography for further reading. This seems contrary to the apparent goal of motivating and encouraging students (and teachers) to pursue individual interests more deeply on particular topics. The textbooks provided very little direction to relevant further information or resources. In addition, by reducing or eliminating some of the content, the new textbooks often did not achieve the fundamental reform goal of reducing teaching and learning loads in practice. Many teachers felt that some of the material no longer found in the new texts was needed in order to teach certain topics well. For instance, in order to clearly understand the impact of monsoons on the climate of China, students needed to learn about the characteristics of monsoons and processes and mechanisms that caused the monsoons. However, much of the detail relating to these were not in the new texts nor was there an alternative source for such information anywhere listed. Teachers felt the need to provide some practical examples, such as, the distribution of annual precipitation in Beijing, even if it was not found in the textbooks. Thus, in practice, since much of the content of the former textbooks was no longer in the new books, many teachers simply continued to consult the old texts as a necessary resource.

Some Preliminary Implications of the New Curriculum

The curricular reform process in Shanghai has resulted in a comprehensive set of changes in the geography courses taught in junior secondary school. This was clearly reflected in the changes to the new textbooks and some of the supplementary teaching materials described above. In addition to any of the pedagogical or other implications of these changes, it is worth highlighting what might be considered the rather more advanced material in the Physical Geography course taught in Grade 6 than was the case before. Moreover, teachers have identified numerous inconsistencies in the new materials such as

information in tables and maps that did not match the text, and similar inconsistencies among the textbooks, teaching handbooks, and student exercise books. While some of these idiosyncrasies were perhaps trivial and unavoidable, taken together they hinted at other much deeper and more fundamental problems. These issues were further explored through a detailed examination of how teachers responded to the new textbooks.

The Role of Textbooks in Geography Teaching in China

Data from a survey questionnaire of geography teachers was utilized to explore the relationship between the new textbooks and teaching. The one page questionnaire consisted of two main parts (see Appendix A). Part one was designed to obtain general background information about the teachers and their schools. Part two of the questionnaire formed the main body of the investigation, from which information about the specific impact of the new textbooks on teaching practice was obtained. Questions 1 and 2 in this latter section inquired about the teacher's personal opinions of the new textbooks. Questions 3 to 5 related to the usage of the textbooks in class. Questions 6 to 8 focused on teaching methods, and question 9 addressed teachers' professional development. The last two questions asked for students' opinions of the new textbooks and geography lessons.

Utilizing the background information it was possible to distinguish 3 broad categories of teachers surveyed based on age, experience and training (see Table 3.6). The first category consisted of 39 teachers from age 50 to 61. Most teachers in this group held a university degree and had been teaching geography courses for 30 years or more. The second category comprised 29 teachers whose age ranged from 30 to 49. Many of these teachers had no university degree, but averaged over 10 years in terms of teaching experience. The third category included the youngest teachers, most of whom had just

Table 3.6

Geography Teachers Surveyed

Category	Number of Teachers	Age	Training			Experience (years)				
			University *	College **	Others ***	1-4	5-9	10-19	20-29	30-40
1	39	50-61	22	12	5	-	-	2	5	32
2	29	30-49	8	19	2	2	2	2	12	11
3	21	20-29	17	4	-	21	-	-	-	-

Source: From the survey questionnaire data.

* Four year degree usually in education (1 teacher had a masters degree).
** Three year teacher training degree.
*** Two year training in primary education (5 teachers); no formal post-secondary training (2 teachers).

Category 1: Teachers in this category were mostly trained in the 1950s.
Category 2: Teachers in this category were middle aged. Most of them had not received formal teacher training.
Category 3: Teachers in this category were young and almost all received advanced training in their respective teaching fields.

finished their university studies. Their age ranged from 20 to 29 and they had on average fewer than 5 years of teaching experience. All the teachers surveyed taught at the junior secondary level including the Physical, World, and Chinese Geography courses in Grades 6, 7, and 8 respectively. A few of them also taught at the senior secondary level. Most of them taught two different courses in the same term, and a few taught either one or three courses.

Thirty-seven percent of the teachers surveyed used the textbook as their only teaching resource, while the other 63% indicated that they utilized other materials in class in addition to the textbooks. Of this latter group, 41% agreed that it was unnecessary to use teaching materials, such as from various geographic magazines, other than the official resources provided by the educational authorities. Eighty-eight percent of this same group of teachers admitted that they had rarely prepared any of their own teaching materials. Thus, while nearly two-thirds of the teachers indicated that they used materials in addition to the textbooks, most used only the official materials provided by schools. Interviews and classroom observations revealed that these materials consisted mainly of the new (and old) textbooks and teachers' handbooks. Clearly most teachers still predominantly relied upon textbooks. There is little doubt that this had implications for the nature of teaching practice.

Determining whether or not the new textbooks had given teachers any means or motivation to change their teaching methods was another reason for conducting this survey. Traditional classroom instruction in China, as was common in most developing and some advanced Asian societies, consisted mainly of teachers giving lectures, of students copying material from the blackboard and reciting what they had memorized. As others have suggested, "little attention [was] paid to learning psychology, the acquisition of practical and social skills, internal motivation, and pupil participation and differences between the abilities and needs of pupils." (Leung, 1991, p. 76) One of the intentions of curriculum reform was to encourage teachers to use different teaching methods by

providing new teaching materials. Yet, 69% of the teachers surveyed said that they did not change their teaching methods after the introduction of the new textbooks. Moreover, 60% of the teachers surveyed confirmed that they were still using lecture-based approaches for most of their lessons. None of the teachers had previously used student-centered methods in practice on a regular basis. However, the proportion of teachers who said they used a "teacher-student-discussion" approach (*shi sheng gong tong tao lun*) did increase from 1 to 4%. Clearly, not many teachers tried to significantly involve students in classroom activities even with the implementation of the new textbooks.

This preliminary analysis confirms that many teachers were still clinging to traditional teaching methods. It seems reasonable at this point to say that new textbooks, while still the central resource and main teaching tool, did not have a significant impact on changing teachers' practice. The textbook-based teacher-centered approach was still widely used in secondary school geography classes. This finding was also supported by the data obtained from classroom observations.

Generally speaking, teachers were quite unwilling to allow such observations. The most common reason given was in reference to the upcoming city-wide graduation examination at the end of the school year for Grade 8 students. The content of this examination covered the geography courses taught in Grades 6, 7 and 8 and many teachers openly said that the classes they were conducting were not "normal" as a result. They claimed that they were rushing through the teaching contents every day in order to leave some time later for students to review the previous materials covered in Grades 6 and 7. Thus, a total of only 11 lessons were observed (see Appendix B). And then, only because other district geography education research specialists were in attendance. In the context of this author's six years of geography teaching experience in Shanghai, however, it was possible to make relevant generalizations about the teaching practice that was observed.

Based on the teaching methods utilized, these 11 lessons were broadly divided into two categories. The first was for lessons with predominantly teacher-centered approaches, and the second category included lessons which tended to have some student involvement in class activities. In the four lessons of the first category, teachers, spent most of the lesson time lecturing students, although wall maps were often brought in as a supplementary teaching tool. Questions were often raised by teachers, but students were rarely required to give answers, and if they did, the responses expected could be found easily in the text. Thus, students called upon by the teacher often read the answers directly from the textbook. Teachers frequently referred to the textbook while presenting certain topics or to emphasize particular points and it was not unusual to see teachers tell students where they could find the answers in the textbook. The following exchange observed in a Grade 6 class was typical:

Teacher:	We have introduced the rotation of the earth. Now let's study the revolution of the earth around the sun.... What does the earth do when it moves around the sun? (short pause) Well, look in your book on page 14. See what the book says. (Then points to a student and asks for the answer)
Student:	Reads the appropriate section of the text until the teacher asks her to stop.

Such teaching methods clearly did not stimulate any desire in the students to explore this issue. Teachers and students relied on the textbook absolutely. In this type of lesson, students were usually asked to do exercises from the workbook individually at the end of each class.

In the second category of lessons, of which there were seven observed, teachers spent a little less time talking to the class and attempted to make greater use of visual aids, such as overhead transparencies or video tapes. Teachers might show the class some

transparencies or part of a video at separate times, and raise questions related to the content of the these visual aids. This sometimes involved students discussing questions and issues in small groups after which teachers would ask students from different groups to inform the class about the results of their discussions. Teachers would point out the places, areas, or other matters on wall maps or might refer to the textbook and try to "guide" students to where the final "correct" answers were to be "found". For example:

Teacher:	(After watching a ten-minute video tape about the natural geography and culture of Western Asia ...) From the video tape we just watched, we know the geographic environment is very dry. Why? ..... Please discuss this (question) in groups.... (after a period of discussion the teacher asked students to present their groups' ideas to the class)
Student A:	The landforms are mainly highlands, so moist air cannot go there very easily....
Teacher:	Basically right! See, the highlands (pointed at the map of West Asia). They are the Iranian, Annatinia, and Arabis Highlands.
Teacher:	Any other reasons? Look at the Map of World Climate Type in your atlas.
Student B:	They are located in a sub-tropical high pressure climate zone and monsoon zone. (She read a passage from the text)
Teacher:	Right! (She pointed at the Map of World Climate Types) This is why it is hot and dry there. Is it dry and hot anywhere else?
Student C:	No! Along the area of the Mediterranean Sea and Black Sea, there is a lot of rain in winter. (He read a passage from the text)
Teacher:	Right! Now open your book to page 26 and underline the first paragraph. (The underlined text is the answer to the question).

Although, this teacher did try to "guide" students in an analysis of the data, she was more anxious about achieving the "correct" answers than engaging the students in meaningful

discussion. To further illustrate the emphasis on recitation and rote learning, students concluded this lesson by undertaking information-mastery exercises.

Although some teachers had access to a variety of media and other teaching facilities, few schools could afford such luxuries. The teacher in the lesson described above admitted that she could only prepare such a lesson once a term or so, since it was so time consuming to prepare. This was mainly due to the fact that almost no supplementary information was readily available and she lacked the proper training and requisite teaching skills for the development and effective implementation of an active learning environment. She indicated that she had spent three months preparing for this 45 minute lesson!

These observations revealed that the textbooks still played a dominant role in terms of teaching practice and lesson content, even in modestly student-centered lessons. Although some teachers did use various visual aids and other materials more often than before, there were essentially very few fundamental changes in teaching practice. The structure of geography lessons, the type of questions asked, and the classroom activities observed were very similar to the sort of teaching observed by this author and others in the mid to late 1980s. The interview data presented below will further reinforce these findings.

Eleven formal interviews of practicing geography teachers were conducted in the field. Interview responses were grouped into three broad categories which roughly corresponded to the three earlier categories of age and teaching experience in the survey questionnaire data. The first group included 4 teachers who had taught geography courses at secondary schools for more than 30 years. From their point of view, the new textbooks were remarkably different from the previous ones, especially in terms of the volume and detail of contents they contained. However, they were more concerned with the numerous inaccuracies and inconsistencies found in the new textbooks. For example, as one of the informants pointed out:

> ... the new textbooks, for example the Geography of China text, are full of many mistakes. Many graphs are useless, except that they look good. You see, on this page, like this graph... I also found, in many places, the content of the graphs and illustrations are not consistent with what the text says, or sometimes it is different from what appears in the students' workbooks .... Very confusing!

All of them admitted that, although the textbooks did include many changes, the way in which they used the textbooks in class, as well as their teaching style, remained largely unaffected.

The second group consisted of three teachers who had 16, 18, and 19 years of teaching experience. These informants, in general, expressed their concerns more in terms of the content of the texts rather than the accuracy or otherwise of the materials. They found the texts to be insufficiently detailed and limited in scope compared to those they replaced. While this was a deliberate goal of the new curriculum, these teachers did not appreciate that less emphasis on content would allow for more focus on general concepts and themes and on higher order thinking skills. As a result, they often went back to consult the old textbooks. As one of these teachers remarked:

> .... The text in the new books is too general. I have to add a lot of meat in order to explain things clearly .... The old textbooks were much better. I find it is helpful to use the old textbooks when I prepare the lessons now...

Regarding their teaching methods, all of them admitted that they still used approaches similar to what they had been practicing before the new textbooks were introduced:

> .... I don't see any necessity for me to change the ways I teach. I cannot let students do the talking--besides they don't know how to think. They don't want to think anyway.... Unless some [education official] comes to observe the class, I do all the talking...

For these teachers, preparing lessons with the new textbooks, was more time consuming and more difficult than before.

The third group of four teachers included those who had just graduated from university. These teachers were generally well trained in their academic subjects and had received some introduction to pedagogy. However, they too tended to use teacher-centered approaches rather than discovery learning or group work that required students to take a more active role in learning. They argued that a didactic approach was necessary to cope with such crowded classes because they had so little teaching experience. Moreover, these teachers had recently experienced similar learning situations during their school days, and they tended to believe that what had worked for them should also work for their students:

> ...I remember vividly how my geography teacher taught us at that time. I basically utilize the ways I was taught, to teach my students now. I don't remember ever being allowed to talk in the class ... so I don't want my students to talk too much either. It makes too much noise and it's too difficult to control...

These younger teachers were also less concerned about how to properly implement the new curriculum and use the new textbooks in class than with how to survive the heavy teaching loads and the intense pressures of the examination system:

> I am teaching 18 lessons a week in addition to other administrative duties. Thus, I rarely have time to think carefully about how to teach the next few lessons. I have to completely rely on the texts, but it makes no difference to me in terms of how to teach. I only teach the content of the book ...and make sure my students know everything they need for the exams...

These young teachers also complained that they did not get as much help as they had expected with the new texts. One of them argued rhetorically:

> I don't care what has changed in the texts .... I only want maps now. My school doesn't have a single map... I asked for help, but they asked me to wait. I have been waiting for one term and I still don't have a map. How can I teach? Never mind about the changes in the textbooks and new teaching methods .... I have to teach what I can.

The concerns and views of implementing the new textbooks at the grass-roots level has confirmed that the curricular changes, as reflected in the new textbooks, have not resulted in any significant changes in teaching practice.

Many other interviews have revealed that local district education specialists and university professors, on the other hand, viewed the new textbooks positively. From their perspective, the new textbooks included many necessary changes. The maps, now added to the texts in larger numbers, they felt had increased their importance in the teaching of geography. More use of graphs and other diagrams, they claimed, had helped raise the level of interest in geographical study and would help to develop students' skills of analysis. However, they did also acknowledge that for various reasons most teachers still clung to the old textbooks and traditional teaching methods.

The editors of the new textbooks also emphasized that the previous textbooks were in need of change. However, they had different views about what should be changed

and how. The chief editor of all the new geography textbooks for secondary schools in Shanghai pointed out that the most important differences from the previous texts were that they had more graphics and less written text which was consistent with the general curriculum reform goal of allowing more time for students to develop their own interests. One of the editors in charge of the new Social Studies textbooks used only in Yangpu District indicated, however, that

> ... the changes incorporated in the new textbooks did not go far enough. Although many revisions were made, the basic structure was the same .... and the written material still comprised the main component of the textbooks.

While all of the senior editors interviewed admitted that the lack of proper coordination among the editorial staff had resulted in many mistakes and inconsistencies in the new textbooks, they were, in general, much more concerned about the need to implement these new materials. However, they also recognized that a chief obstacle to achieving the desired goals was the existing examination system. Thus, while the analysis in this chapter has focused on the role of the new curriculum and the new textbooks on geography teaching, the findings discussed here also allude to a number of other issues relating to their successful implementation.

Summary and Comparison with the Conventional Wisdom

The literature briefly reviewed at the beginning of this chapter highlighted the importance of students' involvement in the teaching process. Student involvement was, in fact, seen as a precondition for developing higher order cognitive skills. While educational reformers in China recognized and appealed for the importance of student activities in classes, the data clearly indicate that these activities garnered little attention from practicing teachers. Large class sizes and the limited time in each lesson-period were two basic elements that mitigated against easy introduction of such activities. In Shanghai, there were an average of 40 to 50 students in each class, and in most cases desks and chairs were prearranged like a railroad car. Teachers rarely had the physical freedom or pedagogical wherewithal to move students around. With lessons of only 45 minutes, moreover, teachers felt compelled to cover a lot of content within such a short period. Thus, there was little time left for teachers to organize students to do any meaningful activities.

The literature reviewed also emphasized the importance of motivation in learning. Motivation was seen as another prerequisite of learning and also as a precondition for getting students effectively involved in cooperative learning activities. Students in China were in a situation in which individual achievement was their first priority. Not only did students not depend upon each other for learning, but in most classes, since they were in competition with each other for grades, there was little motivation to collaborate in learning. The less their classmates learned, the better it was for them. Thus, although teachers did not assign course grades based on a standard required distribution, students were ranked. In a given school, for example, the top ranked students in particular grades could advance without writing certain examinations, sometimes even to university. Furthermore, the streaming of students into arts, sciences, or vocational training, beginning in junior high school, was based on relative standing. Combined with their

desire to score will on various examinations, students generally focused on self study often feigning ignorance if classmates asked for help. In addition to the various other restrictions on classroom activity mentioned above, students themselves lacked any interest in getting involved in collaborative learning processes. Moreover, since almost everything taught in the class could be found in the textbooks, students saw little need to cooperate with each other.

Cooperative learning approaches also highlighted the importance of the teacher's "guide on the side" role. Such approaches required teachers to be able to reach particular objectives while students played a more active role in their own learning. However, the classroom observations and the interviews have shown that teachers in Shanghai were nearly always the centre of the learning process. Most of the learning activities that occurred in the class depended to a large degree on the teacher. As a result, lecturing and rote learning predominated. Teachers felt that such methods were more feasible in terms of reaching the content objectives in geography teaching and for the management of class discipline. This was in part linked to the lack of generally well qualified, adequately trained and skillful teachers. More importantly, the highly structured content-oriented nature of the geography curriculum incorporated and disseminated through the textbooks, despite the recent changes, largely precluded any opportunity or need for alternative methods of teaching.

The literature revealed that although textbooks were often widely used in secondary geography classes elsewhere, other resource materials were also available for teachers. In addition, teachers were the key element considered in the process of textbook selection. However, since textbooks in China were prescribed by educational officials, teachers had no choice but to use them. Moreover, the textbooks were frequently the only teaching resource that teachers had ready access to. Therefore, teachers relied heavily on such texts and, as has been suggested by the above analysis, in the predominantly teacher-centered approaches they engendered.

While studies that revealed the linkages and interrelationships between curricular content and structure, geography teaching practice and the examination system in English speaking school systems also applied to the situation in China, there were fundamental differences as well. In China, development and implementation of the geography curriculum, geography teaching practice and student evaluation existed as three largely separate components of a disarticulated educational system. The university professors, educational bureaucrats and administrators who led the development of the new geography curriculum had very little direct contact with schools and practicing teachers. While the people who wrote the examinations were also largely from the universities, they did not collaborate or consult in any organized or structured way with those who developed the new curriculum. Meanwhile, teachers, who played a negligible role in the development of neither the new curriculum nor the various examinations, were essentially left on their own to cope with these things as best they could. Ultimately, since the textbooks fundamentally represented the content and structure of the curriculum, teachers followed the texts very closely in order for their students to do well on the examinations. Furthermore, as will be discussed in more detail in the next chapter, most questions on the examinations required little more than the recall of knowledge most of which was found in the various textbooks. It is neither surprising nor unexpected, under such circumstances, to find that classroom practice in Chinese middle school geography lessons is teacher-centered, focusing on the need for students to achieve high marks on the examinations largely through lecturing and rote learning.

The above discussion suggests that Chinese circumstances and practice do not readily "fit" the standard accepted conceptualizations of geographical teaching. While stated objectives of the geography curriculum might be seen to correspond to some of these broader somewhat idealized concepts of geography teaching, the actual situation observed in Shanghai secondary schools clearly challenges these ideals. This is contrary to much of the established literature reviewed at the beginning of this chapter which suggests

that such a situation is not desirable. As has frequently been alluded to in the discussions thus far, the new geography curriculum and the role of the new textbooks in geographical teaching have also been influenced by the nature of the examination system. The impact of the examinations on geography teaching was significant enough to be worthy of a separate and more detailed set of investigations. These are undertaken in the next chapter.

CHAPTER IV

Examinations and the Teaching of Geography

The examination system is considered separately here not because it stands alone in its influence on geography teaching, but more as a response to the methodological and analytical practicalities of this study. It turns out that a complete understanding of the nature of curriculum reform in secondary school geography and the impact of the new textbooks on teaching, cannot be achieved without an appreciation of the role of the examination system. As one editor of the new geography texts in Shanghai remarked, "without a thorough change to the nature of the existing examination system, changes to the curriculum will hardly achieve the desired results".

Examinations play a selecting role in the Chinese school system. The results of various examinations historically have determined a student's future academic life. In addition, examinations remain the primary instrument used for evaluating students' achievement, teachers' effectiveness, and the success of schools in China. Therefore, the basic goal for most students and their teachers was to study and teach solely for achieving the highest possible marks on examinations. The examination system has become a key factor in determining the content and methodology of geographical teaching.

This chapter will examine the very first examinations administered in Shanghai since the new geography curriculum was introduced in 1993. Four main sections are included. The first begins with a brief review of the role of examinations in China from a historical context. This section includes a detailed discussion of the examination system in the context of education during the reform period. Changes to the university entrance examination system are also discussed in some detail. The second section will focus on the importance of various examinations in the contemporary secondary school system.

The third will analyze the two Shanghai city-wide geography graduation examinations administered in 1994. Two questions are to be addressed: What content and skills were being tested in each examination? and; What levels of cognitive ability were required for students to perform successfully on each of the examinations? The final section will compare the results of the above analysis to those of an earlier study of Chinese examinations in the 1980s. The main goal of this chapter is to highlight the impact of these examinations, as part of the wider system of assessment and selection, on geography teaching practice in the context of the new curriculum.

Examinations and Education in China

Examinations in Historical Context and During the Reform Period

"The traditional Chinese way of selecting and promoting bureaucrats acquired great fame for its adherence to meritocratic principles at a time when birth and wealth were the prime criteria for achieving public posts in Europe" (Thøgersen, 1990, p. 70). The Chinese tradition for institutionalized meritocratic selection of officials can be traced back to the Han Dynasty more than two thousand years ago. The civil service examination system, which eventually emerged in the 7th century during the Sui and Tang Dynasties, though it was interrupted several times, remained effectively in place until the beginning of this century (Thøgersen, 1990). The characteristics of the traditional examination system was reflected in three particular aspects. First, it was meritocratic. Although access to education was much easier for children of wealthy families than for others, and with the exception of women, virtually all social classes could take examinations to enter the bureaucratic class. The examination system guaranteed a certain degree of social mobility in traditional Chinese society (Ho, 1962). Second, the exams tested "moral superiority" rather than practical knowledge or skills useful in the daily work

of an official (Thøgersen, 1990). Third, passing the examinations and becoming an official was the key to obtaining important social and legal benefits for both candidates and their families. "It was the imperial civil service examination which secured the greatest share of prestige and resources" (Marton, 1990, p. 42). The central aim of virtually all schooling during that period was to facilitate training of candidates for the civil service examination.

In contemporary Chinese education, the career paths of young students were largely determined in the secondary schools. While selection took place at all levels of education in China, perhaps the two most important were "carried out between junior and senior secondary school and between senior secondary school and university" (Thøgersen, 1990, p. 16). The first selection determined who continued along the academic track, who went to vocational schools to be trained as skilled workers or technicians, and those who would leave the education system and become ordinary workers for manual jobs. The second selection determined who would receive post-secondary education. These selections have had greater social importance in China than in the West. At least until very recently, the importance of having a formal education could be related to social prestige, job opportunities, and income.

The Chinese have a tradition of respecting "intellectuals" (*zhishi fenzi*). Although this respect broke down during the Cultural Revolution, the prestige of intellectuals was restored after 1978 to an even higher position. "Intellectuals" in contemporary China, generally referred to people with a college or specialized middle school diploma, and to people who performed "mental" jobs such as school teachers, even those without higher education. However, among all intellectuals, it was the scientists who have been praised the most publicly in newspaper articles and other media during the reform period. Recent surveys of Chinese school children regarding their desires for a future occupation revealed that a large majority of them wanted to be doctors, scientists, and engineers (Thøgersen, 1990). It was clear to these students that they needed to obtain a higher education in order for them to join one of these professions. Despite the increased

opportunities and potential for earning income outside such professions in China, most school age children and their parents recognized the benefits of an advanced education. Parents also pressured their children for success on university entrance examinations to maximize their children's opportunities and to raise their family's prestige.

Education has also gained in importance with respect to access to personal employment opportunities. There was an official emphasis from the central government that workers and other employees should undergo relevant training before entering the workplace. "Training" here referred to the activities undertaken within the school system. In contemporary China, more so than ever before since 1949, lack of an education greatly increased the risk of becoming unemployed and ending up at the bottom of the socio-economic hierarchy (Thøgersen, 1990). With higher education one could gain relatively easy access to higher paid jobs. Since China's open-door policy was implemented at the end of the 1970s, many foreign run or sino-foreign companies were set up in China. Workers with higher educational background were in high demand, even though academic degrees did not always correspond to good practical work abilities in China. The common refrain in this context was "high in marks, but low in ability" (*gaofen dineng*).

In any case, it was clear that access or not to higher education would determine a student's future to a large degree. Thus, the pressure on students to do well on the graduation and university entrance examinations was high. Preparation for such examinations often started as early as primary school. There was a sense that students who were able to study at "key" schools had a better chance to get into university. Therefore, teachers and students focused on advancing to such key junior and senior high schools. Between 1977 and 1985, each level of primary and secondary school education in Shanghai concluded with a public examination which determined which students were promoted to the next level and to which schools. Thus, parents often sent their children to participate in tests even before their first day in primary school in order to decide whether they would go to a key or to an ordinary school.

Examinations and University Entrance

University entrance examinations were reintroduced in an ad hoc basis by provincial educational authorities in 1977 following the decade of the Cultural Revolution. By 1978 a system of standardized national university entrance examinations was established. Since then, with a few notable exceptions, students across China wrote the same exams, answering the same questions in each subject on the same days, July 7th, 8th, or 9th each year. Students advanced to university if their cumulative scores exceeded a certain value based on the number of places available across China. Their specific university program placements were primarily determined by the student's relative standing in the appropriate subjects.

The national unified entrance examinations were divided into two categories, sciences and humanities. Students could choose to write only one of the two. Table 4.1 lists the examination subjects written in each of the two categories for the period 1978 to 1991. Biology was added as one of the subjects tested in the sciences category in 1981. The mathematics test for the humanities candidates was designed with fewer and more elementary questions than that for the sciences candidates (see Table 4.1).

While geography at the post-secondary level in China was considered a science, the university entrance examination in geography was only written by students who intended to major in any of the humanities and social sciences programs, none of which technically included geography. Thus, all university geography majors were considered to be in the science category and were not required to write the geography examination. The rationale was that students who chose the humanities stream in secondary schools, generally had greater difficulties with the basic mathematics and science skills required for a science major at university. Yet, it was possible to have university students who majored in human geography say, who had written the entrance exams for the science stream.

Table 4.1

National Unified Entrance Examinations (1978 to 1991)

Subjects Tested

Sciences	Humanities
Chinese	Chinese
Mathematics	Elementary Mathematics
English	English
Politics	Politics
Physics	Geography
Chemistry	History
Biology (Added in 1981)	
7 Examinations	6 Examinations

Source: From field notes

The introduction of national unified university entrance examinations has had a tremendous influence on students' academic performance. Examination pressures have caused serious problems in both teaching and learning. In order to reduce the pressure of such examinations and to solve some other issues, in 1985 the State Education Commission granted the Shanghai Bureau of Education the authority to develop and administer its own university entrance examinations on a trial basis. By the end of 1986, a new university enrollment procedure had been implemented in Shanghai. It was hoped that the new procedure would reduce the intense examination pressures on Shanghai students.

The procedure included only three tests officially referred to as the university entrance examinations. These were in the subjects of Chinese, mathematics, and English

written concurrently with the national unified examinations on July 7th, 8th, and 9th respectively. City-wide graduation examinations were also written in all of the other required subjects including physics, chemistry, politics, geography, history, and biology for senior secondary school completion. These examinations were to be written at the end of the respective courses in June at the end of the senior two or senior three school year, and were to serve "both as an indicator of attainment and as a selection mechanism" (Mak and Lo, 1996, p. 386). Table 4.2 shows that the university entrance and graduation examinations were weighted differently based on the entrance stream selected. Again, the mathematics test for the humanities and social sciences applicants were designed with more elementary questions compared with that for the science applicants. Although an examination in geography was required for university majors in both sciences and the humanities it was not written specifically for university entrance. In addition, the weighting was heavily biased towards the humanities option even though the university major in geography was still considered a science degree.

Although the formal university entrance examinations were reduced from six or seven tests to three, students had to prepare for all subjects to score well on the graduation examinations which were being considered as part of the evaluation process for their university entrance. Students complained bitterly that the new selection procedure had, in fact, increased their work load. Moreover, prior to the changes, students made a choice for their preferred sciences or humanities major after they received their examination results. This allowed students to estimate their opportunity to be accepted in the subject and department of their first choice. However, in 1986 students were directed to make their selection before they wrote the tests, forcing them to predict their relative standing in each subject. This change caused greater pressure on students than ever before. Students knew if they did not score well enough to get into their preferred subjects and departments, even though they may have scored well in their subsequent

Table 4.2

Examinations and Relative Weighting for University Entrance in Shanghai (1986 and 1987)

	Sciences	Humanities
University Entrance Examinations (July 7, 8, 9)		
Chinese	110	110
Mathematics	120	100
English	100	100
Graduation Examinations (at course completion)		
Physics	75	30
Chemistry	75	30
Politics	40	40
Geography	30	75
History	30	75
Biology	30	30
9 Examinations	610	590

Source: Adapted from Marton (1990, p. 80).

choices, first priority would be given to students who had selected those subjects and departments as their first choice.

In time for the 1988 sitting of the university entrance examinations, the Shanghai Education Bureau responded to the criticisms by introducing another examination procedure called the "3+1" formula (see Table 4.3). Students were still required to write the same three university entrance examinations in Chinese, mathematics, and English, but with the changes they also had to write one optional university entrance examination from

Table 4.3

Examinations and Relative Weighting for University Entrance in Shanghai (1988 to 1990)

Chinese	150
Mathematics	150
English	150
and one from: Physics; Chemistry; Politics; Geography; History; Biology	150
4 Examinations	600

Source: Adapted from Marton (1990, p. 80).

either physics, chemistry, politics, geography, history, or biology depending on the preferred major as determined by the department at the preferred university. These four examinations were written on the same three days in July as the national unified examinations.

Thus, in 1988 students in Shanghai still had to write graduation examinations in all the subjects required for senior middle school completion including Chinese, mathematics, English and all the other six required school subjects. The results of the graduation examinations would be a "backup" reference used when a student was a borderline prospect for university admission or if he was being considered by a key university. Students who selected geography as their preferred major were usually required by their prospective departments to write chemistry or physics as their optional university entrance examination and to do well on their graduation examination in geography.

However, the newest procedure was again soon criticized by many teachers and parents. Shanghai students also complained that such changes did not reduce the examination pressure, but added the greater burden of having to study for even more exams. Under this procedure, students had to write two separate examinations in Chinese, mathematics, and English, and in one of the additional six optional subjects--one for university entrance, and the other for graduation. Although the university entrance examination in geography was one of the optional subjects, very few students were required or chose to write it.

In 1991, the subjects to be tested for university entrance in Shanghai were changed once again. The three subjects of Chinese, mathematics, and English were still written by all the candidates. However, the geography and biology examinations were removed from the list of optional fourth subjects for university entrance and nobody was required to write them. The humanities students were directed to write one optional subject from either politics or history, while sciences students had to write either the physics or chemistry examination as the fourth optional subject for university entrance. One of the reasons for taking the geography examination off the list of optional subjects was that very few students has chosen to write it. In addition, according to a geography textbook editor in Shanghai, students had to spend more time preparing for the geography examination than for any other subject. He was alluding to the fact that students basically had to memorize all the content of the textbooks in order to do well on the geography examination. This university entrance examination formula continued until 1994. There were some minor changes to this formula implemented in 1995 (during the fieldwork in Shanghai) which shall be referred to later.

The evolution of the university entrance examinations in Shanghai has profoundly affected the school curriculum. It divided the required school subjects into two categories of so-called "core" subjects (*zhuke*) and "subsidiary" subjects (*fuke*). The former included Chinese, mathematics, English, physics, and chemistry, while the latter included

geography, history, and biology. Debate continues as to whether or not politics should be categorized as one of the "core" subjects. As a result, the "core" subjects gained priority in all aspects of education including teacher's professional development and teaching resources. Moreover, students developed a less serious attitude towards the subsidiary subjects. However, introduction of the graduation examinations has secured a place in the school system for such subjects including geography. Paradoxically, while attention given to the teaching of geography has increased with a growing acceptance of its role in the secondary school curriculum, the elimination of geography as one of the optional examinations for university entrance also reduced its relative importance in terms of advancement to university.

The Examinations in Chinese Secondary Schools

One of the objectives of curriculum reform in China was to reduce the workload of students so that they would have more time to develop their individual interests. The new geography textbooks were changed in theory to allow for teachers to encourage student motivation and greater learning through exploration. Although this was not explicitly stated, teachers were expected to apply more alternative teaching methods rather than the more traditional practices while implementing the new textbooks. The previous chapters have highlighted many factors which prevented teachers from doing so. The nature of the examination system was, perhaps, the single most important factor that prevented teachers from achieving this goal.

The evaluation system for secondary school geography was based almost solely upon various examinations. In addition to mid-term and final examinations in each term, there were also city-wide geography graduation examinations at the end of Grades 8 and 11, coinciding with the completion of the required courses at the junior and senior levels.

Graduating students received two certificates of completion. The first was issued by the school, based on achievement on the school-wide exams. The other was issued by the Shanghai Education Bureau, based on the city-wide graduation examinations. Students who passed the school-wide examinations by the end of Grades 9 and 12, would receive graduation certificates from their junior and senior secondary schools respectively. The city-wide graduation examinations were held at different times depending on the subject. The first examination in geography covered all the materials taught from Grades 6 to 8, while the second covered only the content of the newly condensed Grade 11 human and environmental geography curriculum. However, most schools were still willing to issue a graduation certificate even if students failed an examination in one or two courses. Similarly, the Shanghai Education Bureau would still issue a graduation certificate even if students failed up to three of the city-wide examinations. Even the University Entrance Examination Committee decided in 1989 that students who failed up to three city-wide graduation examinations were still eligible to participate in the Shanghai university entrance examinations.

Other examinations were normally held twice a term in secondary schools. One was the mid-term examination, and the other was a final examination. The final grade for a student in Grade 7 geography, for example, consisted of three components: 30% for the mid-term exam score; 60% for the final exam score; and 10% was based on the completion of exercises in the students' handbook. The graduation examinations referred to earlier did not constitute part of the grade assigned for particular courses. After the reintroduction of the national university entrance examinations, however, Chinese education officials at all levels, but particularly teachers in secondary schools, became obsessed with tests and examinations. "Quizzes everyday, and exams every other day" (*xiaokao tiantian you, dakao sanliujiu*) had become the school routine for many students. Exercise books, papers, and mock quiz handbooks were published to help students prepare for the public examinations.

Evening schools and weekend courses were provided for reinforcing the knowledge that students received from the textbooks. In addition, the Teaching Research Office of the Shanghai Education Bureau published graduation examination guides for each subject to assist teachers and students in their preparation. The guide for the 1994 junior secondary school geography graduation examination based on the new curriculum, for example, listed all the detailed content and knowledge requirements of the exam (Teaching Research Office, 1994). It also provided sample questions and self-test exercises. With the intense focus on achievement on such examinations, students were buried in homework and other exercises averaging six hours per day including weekends and holidays. Thøgersen (1990) has estimated that from the time a child entered primary school to his or her graduation from senior secondary school, that student would have gone throughout between ninety and one hundred screenings based on academic tests.

The importance of examinations was so significant to teachers, students, and school officials that the goals and objectives described in the curriculum were often either ignored or distorted to fit the need for students to obtain high marks. Subject content, teaching methods, and assessment practices, especially at the upper levels were largely determined with reference to the graduation and/or university entrance examinations. Thus, the school curriculum was managed in effect to reflect the demands of such examinations. For instance, although geography was a required course, it was generally viewed as a less important subject than mathematics, physics, and other "core" subjects. The exclusion of geography from the university entrance examinations in Shanghai between 1991 and 1994 contributed to a further decline in the status of geography in the schools. As a result, principals and senior administrators in many schools were less concerned about what went on in the geography class than in other "more important" subjects. The primary concern was that activities in geography did not disrupt other classes.

Even the reintroduction of geography into the university entrance examination system in 1995, had little direct impact on the poor status of geography in Shanghai's secondary schools. Of the 36,402 students who graduated from senior secondary school in 1995, only 68 chose to write the university entrance exam in geography (Qi, 1995; State Statistics Bureau, 1996, pp. 342)! Therefore, when the time for examinations in other subjects was at hand, geography, biology and other subjects perceived as less important were either not taught or disregarded so more time could be devoted to other subjects that were more important for university entrance.

The literature reviewed in Chapter III indicates that the teaching methods utilized by teachers have a great impact on the outcome of teaching. In particular, the importance of recognizing students' needs and the necessity of seeking a balance between those needs and the objectives of teaching when selecting instructional approaches was highlighted in many studies. However, analysis of the first hand data from Shanghai revealed that while teaching methods focused on satisfying students' needs, they usually ignored the stated goals of the geography curriculum. Since the primary goal of students was to get high marks on the graduation and university entrance examinations, the most efficient teaching methods would be chosen for achieving this objective.

The geography curriculum was very much bound to the text which tended to emphasize geographical facts both in terms of content and structure. In addition, as will be demonstrated in the following section, examination questions overwhelmingly required students simply to recall information which was most often located in the textbooks. Thus there was little incentive, at least in terms of the examinations, for teachers to utilize classroom methodologies other than rote learning and memorization. Although the need for developing students' thinking and problem-solving skills was addressed in the objectives of geography teaching, this was rarely reflected in classroom practice.

Since teachers' promotion and economic status within schools depended largely on their students' achievement on the examinations, teachers were encouraged to utilize

methodologies that produced high student pass rates on standardized tests (Lynn, 1992; also Marton, 1990). Moreover, due to the rapid expansion of secondary school education in the 1970s, a large number of teachers in China were underqualified (Thøgersen, 1990). Many of these teachers did not receive any formal pedagogical training before they were assigned a teaching position. As was suggested in Chapter III, many of these teachers found they did not have the skills to adequately cope with the new teaching materials. Facing the possibility of lower pass rates by their students on examinations, they responded by relying heavily on the text-bound materials. Furthermore, teachers who were successful in teaching knowledge saw little need to teach beyond the specific content of the curriculum and textbooks. Combined with the generally poor pedagogical training of teachers, these factors contributed to the dominant practice of teaching for memorization rather than conceptual understanding, running counter to the spirit of curricular reforms.

Although some effort has been put into reducing the gap between the goals of the curriculum planners and the practical implementation of the new curriculum by teachers, little has changed thus far. While there is, perhaps, no single solution to this problem, changes to the examination system might provide the key to improving this situation. Among other things, the strong influence of the examination system has meant that schools, teachers, and students were unable, it seems, to respond positively to the intended goals of educational change. Understanding more precisely the relationship between the examinations, the curriculum, and teaching practice, would provide a foundation for exploring viable responses to the apparent impasse. Steps toward this understanding begin with the analysis undertaken in the following section.

Impact of Examinations on Geography Teaching Practice

The previous sections of this chapter have revealed that the examinations played a significant role in the secondary school students' academic life. This section seeks to illustrate exactly how the system of geography examinations influenced the nature of teaching, both in terms of content and methodologies. There are two parts to this section. The first analyzes the structure and content of two geography graduation examinations collected in 1994 in Shanghai to determine the relationship between the content of the exams and the textbooks. The second will determine the cognitive level of the questions in both examinations as a basis for understanding the dominant teaching methodologies.

Structure and Content of Examinations:

Two examinations were collected during the field work in Shanghai and are analyzed here. One was the 1994 Shanghai junior secondary school city-wide geography graduation examination for the schools using the new textbooks (see Appendix C). The other was the city-wide geography graduation examination administered in 1994, but for use in the schools that were still using the old textbooks (see Appendix D). Except for students in the 22 trial schools that wrote the first examination, the majority of students in Shanghai wrote the second version. The examination questions were compiled according to each relevant curriculum. Students who wrote the examination based on the old curriculum were allowed to consult their textbooks and atlases as well as their exercise books during the examination. The one for the schools experimenting with the new textbooks consisted of both open- and closed-book sections.

Both examinations contained the same types of questions including fill in the blank, multiple choice, match pairs, and the use of maps or diagrams. The number of questions of each type and the proportion of marks allotted to each were not the same for both examinations. However, the specific value of individual responses for particular types of

questions was comparable. For the majority of questions one point was awarded for each correct answer. Both examinations also included some multiple choice questions worth 2 points for each correct answer. In addition, both examinations had a maximum score of 100 points with a time limit of one hour. The content covered by both examinations has been analyzed and is grouped into six categories:

1. Basic Geographical Knowledge
   Seasons in a year, and shape of the earth

2. General Physical Geography of China
   Topography, weather and climate; rivers and lakes; coastal and interior geography; and flatland's and mountainous regions.

3. Regional Geography of China
   Administrative divisions; topography and climate of individual provinces, autonomous regions and municipalities; major cities and their functions; economic activities and natural resources in different regions; and population distribution.

4. Geography of the World's Major Regions
   Natural regions of the world, continents, oceans and world climate; and the regional geography of Asia, Australia, Africa, Europe, North and South America and Antarctica.

5. Environment
   Resource exploration exploitation and protection

6. Topographic Map Skills
   Basic map skills such as the determination of distance, direction, latitude and longitude; and reading contour lines, symbols, and diagrams; general geography skills related to he reading of maps, diagrams, and charts are also tested in the other five topic categories.

Two tables of specifications which summarize the analysis of the two examinations have been developed based on methods applied in Marton's work (1990) (see Tables 4.4 and 4.5). The topics in the first column of each table correspond with the numbers of the topics categorized above. The figures which appear in the four remaining columns of

Tables 4.4 and 4.5 represent the proportion of the total number of marks allocated in each category. The distribution of marks for each type of question are shown at the bottom of each table. The total proportion of marks in each topic, shown in column five, is not precise since there existed much overlap among topics. Rather, they are the best approximation as determined by the apparent topic emphasis of each question. It is the relative distribution of marks, as an indicator of the topical emphases in the examination, that is important here rather than the exact value for each topic.

In the examination for the majority of schools, the largest proportion of marks (40%) was allocated for six questions which required map reading. Fill in the blank and multiple choice questions were worth 24% each, while the remaining 12% were allocated to three pair matching questions. Sixty-four percent of the examination marks related to Chinese and World regional geography (see the right hand column of Table 4.4). The second largest proportion of marks was associated with topographic map skills at 22%, and the remaining 14% of marks were to do with general knowledge of Chinese physical geography. There were no questions on either the basic knowledge of geography or the environment in this examination (see Table 4.4).

For the examination based on the new textbooks, the largest proportion of marks was also allocated to map reading questions which were worth 46% of the total (see Table 4.5). Multiple choice questions accounted for 32% of the total. There were fill in the blank questions all of which appeared in the closed book section representing 10% of the total. The remaining 12% was allotted to the pair matching questions. Seventy-two percent of the examination contained questions relating to Chinese and World regional geography with nearly three-quarters of these focusing on China (see the right hand column of Table 4.5). As with the more widely written test, the second largest proportion of marks in this examination was allocated to questions relating to the general knowledge of Chinese physical geography. However, the relative value of this part was only 14% of

Table 4.4

Specifications

1994 Shanghai Junior Secondary School City-Wide Graduation Examination for Schools Using the Old Textbooks: GEOGRAPHY

(Open Book Test: 60 minutes)

	Cognitive Level			
TOPIC	Knowledge	Understanding and Application	Higher Mental Processes	TOTAL (%)
1.	-	-	-	-
2.	12	2	-	14
3.	30	6	-	36
4.	24	4	-	28
5.	-	-	-	-
6.	12	10	-	22
TOTAL (%)	78	22	-	100

Type of questions (%):	Fill in the blanks	24
	Multiple choice	24
	Pair matching	12
	Map reading	40

Table 4.5

Specifications

1994 Shanghai Junior Secondary School City-Wide Graduation Examination for Schools Using the New Textbooks: GEOGRAPHY

(Part 1 Closed Book: 20 minutes, Part 2 Open Book: 40 minutes)

	Cognitive Level			
TOPIC	Knowledge	Understanding and Application	Higher Mental Processes	TOTAL (%)
1.	5	-	-	5
2.	14	-	-	14
3.	44	7	-	51
4.	21	-	-	21
5.	2	-	-	2
6.	-	7	-	7
TOTAL (%)	86	14	-	100

Type of questions (%):	Fill in the blanks	10
	Multiple choice	32
	Pair matching	12
	Map reading	46

the total. Seven percent of questions tested students' topographic skills, and the final 7% were allocated to general knowledge and environmental issues (see Table 4.5).

The distribution of the marks shown in Tables 4.4 and 4.5 indicate that topics of general regional geography were heavily emphasized in both examinations. Indeed, both examinations were content oriented. Interestingly, the examination for the new curriculum tested even more detail and a wider array of content than the examination for the old curriculum. The distribution of marks also indicates that broader geographic themes and comprehension related questions were de-emphasized in both examinations. Moreover, the examination for the new curriculum contained fewer questions which tested students' analytical and problem solving abilities. These findings seem to fundamentally contradict the stated goals of the new curriculum which sought to reduce the detailed content in the textbooks and focus instead on enhancing students' geographical skills, analytical abilities, and comprehension of more general geographical concepts. This apparent incompatibility between the goals of the new curriculum and the nature of the examinations was also evident in the cognitive level of the examination questions discussed in the following section.

Cognitive Level of the Examination Questions

The figures in the middle three columns of Tables 4.4 and 4.5 represent the value of marks available across the six topic areas for each of three cognitive levels. These levels were categorized as knowledge, understanding and application, and higher mental process. The criteria utilized to determine the cognitive level of each question were based on work by Bloom (1956). Details of these criteria and some examples from the realm of Chinese Geography are provided in Appendix E. As with the analysis described in the previous section the number of marks in each of the topics were best approximations because of the overlap of topics. Similarly, there was some overlap between cognitive level categories as described in Appendix E. However, since the detailed breakdown of

correct responses including the allocation of marks allocated to subsequent parts was quite clear (see Appendices C and D), this made it easier to determine the total number of marks at each cognitive level.

Still, determining the appropriate cognitive designation of each question was not as straight forward as it might seem. Upon first reading, some questions appeared to require higher mental processes. However, review of the relevant section of the textbook and students' exercise booklet often revealed that the same questions were used as examples in the texts or had been answered previously by the students. If students had already come across exactly the same problems previously, such questions were categorized at the level of knowledge, even if they had at some point demanded the application of a higher set of skills or method of analysis. Furthermore, virtually, all the maps and diagrams referred to in the examination questions could be found in either the textbooks or students' exercise booklets. As such, solutions to most of these questions could also be found in the textbooks. For example, question 3 in Part III of Section II of the examination for the schools using the new textbooks required students to study an unlabeled outline map of China (see Appendix C). The same map is located on page 55 of The Geography of China (vol. 2) textbook, and the correct responses to the six sub-questions relating to this same map were easily located in the accompanying text from pages 55 to 60. In addition, a very similar map and questions were located in the students' exercise booklet on pages 15 to 18. Since these questions had already been completed by the students, and their answers checked and confirmed by their teachers, the respective marks were allocated to the knowledge category.

Similarly, question 6 in Part IV of the examination for schools using the old textbooks required students to read a map of the United States and answer four related sub-questions (see Appendix D). Not only was the map a direct copy from page 65 of the World Geography (vol. 2) textbook, the answers required to three of the four questions were lifted verbatim from the textbook as well. The fourth question which asked students

to identify the most likely climate type at given locations required a somewhat higher level of thinking and careful map-reading skills on the part of students. However, the answer to this question also appeared in the maps' description in the textbook. Since this exam was open book, students only needed to refer to the appropriate maps to quickly determine the correct answers. A close look at the examinations also indicates that the marks awarded for correct answers to the relatively few questions which required understanding and application, had the same relative value as those awarded for the straight recall of knowledge. That is, the marks earned for each correct answer were the same regardless of the cognitive level tested.

Questions which tested students' topographic map skills (Topic 6 on Tables 4.4 and 4.5) required disproportionately higher cognitive levels to answer correctly. Ten of 22 marks and 7 of 7 marks were assigned to such questions on the examinations for the former and the new curricula respectively. If areas of greater difficulty can be associated with questions which required higher cognitive abilities to answer correctly, then topographic map skills might be considered more difficult. On both examinations, however, these questions were significantly out-numbered by "easier" questions across the other five topic areas which largely required only the recall of knowledge.

Most of the map and diagram completion type questions were at the level of knowledge with only a very few at the level of understanding and application. The total proportion of marks for all types of questions in the understanding and application category was relatively low in both examinations. Neither examination asked questions which tested higher mental processes. Interesting and significant in the context of this study of the new geography curriculum, was that only 14% of the examination for the schools using the new textbooks tested levels of thinking higher than the straight recall of knowledge. This was a full 6 percent points fewer than the examination for the schools using the old textbooks. Allowing for even a modest level of error due to the somewhat

subjective nature of this analysis, it seems pretty clear that what was being emphasized in these examinations was at loggerheads with the goals of the new geography curriculum.

Summary and Comparison with Geography Examinations of the 1980s

The analysis in the preceding section has revealed that both examinations tended to emphasize low-level cognitive skills with a large number of questions requiring only the recall of knowledge. Moreover, compared to the examination for the old curriculum, the test based on the new curriculum was more content oriented with fewer thematic or general comprehension questions. Taken together, analysis of the content and cognitive levels of these examinations strongly suggests that they contradicted and probably even counteracted the goals of curricular reforms in geography. As it turns out, these findings were entirely consistent with the results of an earlier study of geography examinations administered in the late 1980s (Marton, 1990). A brief review of the results of this earlier study serves both to summarize and highlight the most important findings of the analysis undertaken in this chapter.

Although there have been some studies about examinations in China since 1977, only Marton (1990) has focused specifically on the impact of examinations on geography teaching practice in Chinese secondary schools. His analysis was based on three university entrance examinations administered in 1978, 1983, and 1987, and two Shanghai graduation examinations administered in 1986 and 1987. These examinations were written by students at the senior secondary level and the topical content of the examinations was in general more wide ranging than the two Shanghai graduation examinations from 1994 analyzed in the previous section. However, there were numerous other similarities between the two sets of examinations which are worth highlighting here.

The examinations consisted of very similar types of questions. Although the exams in the early 1980s included more questions which required written responses, by the end of 1980s the structure of the examinations had seen a shift away from the use of such questions to the more easily graded fill in the blank, multiple choice, and true or false type questions. This change was due mainly to the difficulties of marking a growing number of examinations. The other obvious change was the increasing number of maps, charts, and diagrams in the tests and the need for students to refer to them in order to respond to the questions. The structure and format of the geography examinations which had emerged by the late 1980s closely resembled the exams analyzed in this study.

As with the 1994 examinations, the earlier exams also tested the broad topical content as outlined in the respective geography curriculum. However, since the examinations in the 1980s were administered at or near the end of senior secondary school, the geographical content covered by these exams extended to a wider range of topics. These were grouped by Marton (1990, pp. 101-102) into 10 categories:

1. General Physical Geography of China
2. Regional Geography of China
3. Geography of the World's Major Regions
4. Geomorphology and the Earth in Space
5. The Atmosphere, Hydrosphere and Biogeography
6. General Economic Geography
7. General Social Geography
8. Resources
9. Environmental Concerns
10. Topographic Map Skills

The number associated with each category corresponds to the topic identified in the first column of Tables 4.6, 4.7, and 4.8 which illustrate the distribution of marks and cognitive levels for some of these earlier exams. Before 1983, the geography examination questions tended to focus on the physical and regional geography of China and other regions of the World (see Table 4.6). Since then, the emphasis on such questions declined

Table 4.6

Specifications

1978 National Unified Entrance Examination for General Universities and Colleges: GEOGRAPHY

TOPIC	Cognitive Level: Knowledge	Understanding and Application	Higher Mental Processes	TOTAL (%)
1.	19	6	-	25
2.	15	-	-	15
3.	20	-	-	20
4.	3	-	-	3
5.	6	-	-	6
6.	6	-	-	6
7.	1	-	-	1
8.	-	-	-	-
9.	-	-	-	-
10.	13	11	-	24
TOTAL (%)	83	17	-	100

Type of questions (%):

Fill in the blanks	- 10
Multiple choice	- 10
Written response	- 65
Map completion	- 15

Source: Adapted from Marton (1990, p. 109).

Table 4.7

Specifications

1987 National Unified Entrance Examination for
General Universities and Colleges: GEOGRAPHY

	Cognitive Level			
TOPIC	Knowledge	Understanding and Application	Higher Mental Processes	TOTAL (%)
1.	9	2	-	11
2.	12.5	1	-	13.5
3.	15	-	-	15
4.	10	2	-	12
5.	12	-	-	12
6.	8.5	2	-	10.5
7.	3	-	-	3
8.	9	2	-	11
9.	3	-	2	5
10.	1	6	-	7
TOTAL (%)	83	15	2	100

Type of questions (%):	Fill in the blanks	50
	Multiple choice	33
	Written response	10
	Map, chart and diagram completion	7

Source: Adapted from Marton (1990, p. 113).

Table 4.8

Specifications

1987 Shanghai Regular Senior Middle School
Graduation Examination: GEOGRAPHY

TOPIC	Cognitive Level: Knowledge	Understanding and Application	Higher Mental Processes	TOTAL (%)
1.	1	-	-	1
2.	3	-	-	3
3.	8	-	-	8
4.	15	5	-	20
5.	18	6	-	24
6.	11	1	-	12
7.	7	-	-	7
8.	18	-	-	18
9.	2	1	3	6
10.	-	1	-	1
TOTAL (%)	83	14	3	100

Type of questions (%):	
Fill in the blanks	38
Multiple choice	29
True or false	10
Written response	16
Chart and diagram completion	7

Source: Adapted from Marton (1990, p. 112).

with a commensurate shift to more general topics on the physical and human aspects of the discipline (see Tables 4.7 and 4.8). This evolving emphasis in topics was a result of the emergence, in the 1980s, of a new, more comprehensive geography that was supposed to be more sensitive and better able to respond to the increasingly complex interdisciplinary issues of national importance in China. Examinations in the 1980s were largely testing the topical emphases in the changing middle school geography curriculum. However, a corresponding emphasis on the higher levels of thinking that one might have expected under such circumstances was not evident (Marton, 1990).

Which brings us to a further similarity between these examinations and the ones analyzed here. All these examinations generally focused on testing only the lowest cognitive level of knowledge. The analysis of the five examinations from the 1980s revealed that over four-fifths of the questions required only the recall of knowledge most often found in the textbooks (see Tables 4.6, 4.7, and 4.8). Moreover, the dominant teaching methods utilized by practicing teachers in the geography classes of the 1980s were rote learning, memorization, and other traditional pedagogies. Similar to the findings outlined in this chapter, such methodologies were largely a response to the nature of the examination system and the need for students to achieve high marks on the examinations (Marton, 1990).

The 1994 city-wide geography graduation examinations analyzed here were very similar to the exams administered in the 1980s in terms of the way in which their topical emphases and the cognitive levels tested were consistent with what was being taught and the dominant methodologies. While it would be difficult to claim that these specific examinations had a particular impact on geography teaching practice, they were part of a wider array of assessment and selection instruments which very clearly did. Examinations have remained as the "conductor's baton" (*zhihuibang*), to use the vernacular of numerous informants, which largely determined the nature of geography teaching both in terms of content and methodology. This finding is further supported, moreover, by a recently

published survey, wherein students bitterly complained about the "test-oriented teaching methods and irrational knowledge structure" to which they were subjected (China News Digest, 1997b).

The new selection criteria introduced after 1977 transformed China's educational system, particularly secondary schooling, almost overnight into a meritocratic, competitive and elite-oriented structure (Thøgersen, 1990). Although moderate advances have been made since 1977, many problems clearly remain. Access to university in particular was still very limited and, since selection was still based on examinations, success on such examinations continued to constitute the vital stepping stones in a person's educational career and to dictate the form and content of teaching practice.

Yet, the subject of geography occupies a somewhat ambiguous position in the secondary school curriculum with regards to student advancement. Geography was the subject most frequently sacrificed so students could focus on other "core" subjects perceived as more important. Students, school leaders, and parents also paid less attention to the subject in part because there were few incentives to pursue the study of geography. In terms of entering university, for example, those who actually choose to major in geography were still not required to write the university entrance examination in geography. However, geography was still designated as a required subject and all secondary school students in Shanghai were to write the respective graduation examinations.

Under these circumstances, geography teachers in secondary schools faced particular challenges. Since teachers' salaries and professional standing in part depended upon their students' achievement and rates of promotion, it was, perhaps, geography teachers themselves who most wanted their students to do well on the examinations. Moreover, since students had little interest or motivation to study geography under the circumstances described above, and with the graduation and other examinations paramount in their minds, geography teaching often degenerated into spoon-feeding

students with facts and details to be memorized. Such rote learning and recitation have been the most effective teaching methods to ensure that students acquired all the necessary knowledge from the textbooks. Thus, there was little room left for the development of any practical geographical and analytical skills or problem solving abilities.

Since no one could afford to ignore the pressures of the examination system, it was not surprising that the traditional methods were dominant in geography teaching practice, even though other methods have been demonstrated to be more efficient and effective in improving students' cognitive level of thinking and interest in the discipline. The dominant impact of these examinations on teaching practice has been so profound that teachers and other school workers have found it very difficult to implement the new geography curriculum effectively. Changes to the existing examination system have been debated for some decades in the Chinese educational realm. If significant changes to the examinations were indeed undertaken, they would need to be sensitive to all the practical complexities of Chinese schooling in such a way as to have a positive influence on geography teaching practice. These, and other findings from the preceding analysis are reviewed and elaborated upon in the final chapter.

CHAPTER V

Conclusion and Discussion

The final chapter of this thesis is comprised of three sections. The first begins by referring to the central research questions and the working hypotheses of this study. This is followed by a review of the major findings which emerged from the investigations. The second section summarizes several of the important issues which arise from the analyses of the previous three chapters. These are discussed particularly in terms of the challenges which confront geography curriculum reform in Shanghai. The final section of this chapter, and of this thesis, will refer to some of the practical implications of these findings in the context of conventional models of curriculum change.

Research Questions, Hypotheses and a Review of the Major Findings

The analysis and subsequent discussions undertaken in this study focused on the following central research question: Have changes to the geography curriculum in Shanghai achieved the desired results? To answer this question a variety of first hand data from classroom observations, a detailed survey questionnaire of teachers, extensive formal and informal interviews, and an analysis of two city-wide geography graduation examinations were collected during an eight month research residence in Shanghai. Combined with the author's prior teaching and educational research experience and numerous secondary materials, four specific supplementary research questions were also addressed: What exactly were the changes to the geography curriculum? ; Were the new teaching materials (textbooks) consistent with the goals of curricular reforms? ; Have changes to the curriculum resulted in any changes to the nature of geography teaching practice? and; What has been the impact of the examination system on geography teaching?

The working hypothesis which arose from these questions was that geography curriculum reform in Shanghai did not, in fact, have the desired impact on the content and structure of the subject, nor did it have any significant positive affect on geography teaching practice. A further related hypothesis to emerge was that the examination system still influences to a significant degree curricular content and classroom teaching methodologies in secondary school geography.

The evidence uncovered in the analyses of the previous three chapters suggests rather clearly that these hypotheses must be accepted as stated. While specific changes to the geography curriculum were vigorously and successfully pursued, the way in which such changes were developed and implemented essentially undermined the intended goals of curricular reform. Although the geography curriculum was revised, as reflected in the new teaching materials and especially the new textbooks, what was going on behind the classroom door remained fundamentally unchanged. Various forms of memorization and rote learning were still the dominant teaching methodologies in geography classes.

This latter finding was also clearly linked to the nature of the examination system. Analysis of the examinations themselves has revealed at least two key findings. First, the examinations largely focused on testing a wide array of regional geographic knowledge, or conversely, on testing a relatively narrow range of more intellectually demanding thematic understandings and geographic skills. Or put another way, even the most recent examinations focused on detailed content, contrary to the stated goals of the new geography curriculum. Second, not unlike the character of the examinations which preceded the most recent curriculum changes, to a very high degree the newest examinations also emphasized low level cognitive skills with a disproportionately large number of questions requiring only the recall of knowledge.

Moreover, findings from the classroom observations and survey questionnaire revealed that geography teaching methodologies predominantly treated students as passive receptors of knowledge with most classroom activities focused on lower levels of

thinking. Such teaching methodologies were entirely consistent with the nature of city-wide graduation examination in geography. Taken together, these findings confirm that the examinations remained as perhaps the most significant influence on curricular content and teaching practice in the Shanghai geography classroom.

While the major findings briefly summarized above should not be considered particularly unique or surprising, the process of reaching these conclusions has revealed a number of other important issues which are reviewed in the following section.

Challenges for Geography Curriculum Reform in Shanghai

At least four critical issues have emerged from the preceding analysis, which challenge or contradict the desired goals of change to the geography curriculum. The first relates to the role of teachers in curriculum development and its effective implementation. The second regards the pressures of the examination system, while the third has to do with the relatively low status of geography in secondary schools. The fourth is about the generally poor professional training of teachers.

The Role of Teachers in Curriculum Change

The extremely limited involvement of teachers in the development and implementation of the new geography curriculum in Shanghai seems to contradict one of the key elements of conventional models of the process of curricular change. Analysis of curriculum change in Chapter II illustrated that curriculum development in China was a highly centralized and hierarchical process. From an international perspective, China's "national style" of curriculum development embodies the characteristics of a "confined" system (Becher and Maclure, 1978; Morris, 1986). That is, curriculum development was largely confined to the central authorities which possessed the legal and administrative

instruments of curriculum control. Uniformity of action and conformity with central decisions, which were seen as a key factor leading to the success of the Chinese Revolution in 1949, were also applied to modern curriculum development practice. Even with the most recent curriculum reforms, when different publishers were allowed to develop their own curriculum and related teaching materials, the key processes were overseen by the State Education Commission. The central policies of the SEC were to be followed strictly. This top-down structure of curriculum development in China has for various reasons included only a very limited role for teachers at the grass-roots. Therefore, since most teachers had a kind of "outsider" feeling toward the "down-loaded" curriculum, they had virtually no vested interest in change.

In China, there has also been a tension in the schools between political correctness and the practical needs of both teachers and students. Teachers were closely watched to see if they were implementing centrally determined educational policies correctly. Since the student movement in the spring and summer of 1989, teachers have been under particular pressure to use only the prescribed and politically correct teaching materials. This has resulted in the facade of change while official policies toward the new curriculum had little impact in the classroom, especially in terms of teaching style.

There were several reasons why teachers did not embrace these changes, such as poor teacher preparation, backward teaching facilities, and the pressure of examinations already discussed. However, the underlying issue to be emphasized here is that processes of curriculum change did not adequately address or even intend to solve the problems that teachers considered their top priorities in the geography classroom. Helping their students to achieve high marks on various examinations was, perhaps, the greatest concern in teachers' minds.

The Examination System

Reintroduction of the university entrance examinations after the Cultural Revolution in 1977, "was just one facet of the renewed emphasis on testing which spread very quickly throughout all levels of schooling" (Marton, 1990, p. 136). Testing was applied at entry and exit points across the school system, for the selection of talented children, and for streaming purposes. This culminated at the end of the junior and senior secondary levels with intense competition for a place in the key senior schools and the post-secondary intake respectively. Examination scores also became the primary criterion for students to advance to the next level of schooling and were the main means for evaluating the effectiveness of schools and teachers. Moreover, teachers' status, in terms of their income and professional title within the school system partly depended upon how their students performed on examinations. Since curricular reforms apparently did not affect the existing evaluation system, teachers and school officials did not treat such curricular changes too seriously. It was the examinations rather than the curriculum guides, as school officials, teachers, and students frequently suggested, which became the powerful "conductor's baton" in the schools. There was a common refrain among school teachers that before any of the curriculum reforms could be meaningfully implemented, there was a need to "break the conductor's baton" (*dapuo zhihuibang*).

The literature reviewed in Chapter III suggests that teachers should be encouraged to utilize various methods and teaching materials to meet the needs of students. However, the preceding analysis has revealed that the nature of the Chinese examination system left teachers with little choice but to stick to the prescribed textbooks and traditional teaching methods. The reality of schooling in China has been such that students, parents, and teachers continued to treat school not as a place for personal development but as a means for social mobility based on competitive examinations. Despite the promotion of new pedagogies which involved a movement away from description to more analytical and activity based approaches, teaching styles have changed little. While many teachers felt

that the new pedagogy was preferable, the pressures on them arising from the school environment and particularly from the pressure to achieve high examination pass rates, prevented their effective implementation.

Examinations tested only low-level cognitive skills such as the recall of knowledge. Moreover, since the questions were designed in such a way that virtually all the answers could be found in the textbooks, teachers were compelled to focus on content, using a "spoon feeding" teaching method to ensure their students obtained all the information needed for the tests. The examination process permeated all levels of schooling reinforcing the traditional modes of learning. As a result, teachers tended to concentrate on the most able students as schools became more narrowly academic, more competitive and less cooperative and group oriented. Thus, since teachers and students were influenced primarily by the nature of the examination system, any divergence between the intentions of the curriculum and the examinations resulted in a gap between plans and practice.

The Status of Geography

During the Cultural Revolution, geography, along with other subjects, was excluded from the secondary school curriculum. With the resumption of the university entrance examinations in 1977, and implementation of the secondary school graduation examinations in 1986, the status of geography teaching in secondary schools increased. However, its popularity began to drop when geography was once again excluded from the university entrance examinations in 1991. The change in status of this subject inevitably had an impact on the teaching of geography. Even though the position of geography in the school curriculum seemed assured with its reintroduction again as one of the university entrance examinations in 1995, by then, both school officials and students had developed a less serious attitude towards geographical study. In some schools, geography had become the subject dispensed with if students needed more time to prepare for examinations in

other subjects perceived as more important. Although, taken on their own the results of the geography examinations, especially at the junior level, might not have a serious influence on students' graduation, they certainly could affect geography teachers' status in terms of their income and professional titles. Therefore, geography teachers were at the centre of two opposing forces. With the pressures of the examination system on one side and the low spirit of students towards geographical study on the other, geography teachers faced more challenges than ever before.

Professional Training of Teachers

It turns out that most teachers were ill equipped to adequately cope with such challenges especially in the context of the official desire to implement the new geography curriculum. The professional development of teachers was stressed in the standard curriculum development models and was portrayed as an important component of curricular change. According to these models, curriculum planners must not only explain the purposes of change, but help teachers to cope with change through various training programs. However, the analyses in this study have shown that there was no comprehensive plan nor an effective mechanism for preparing Shanghai teachers to implement the new geography curriculum and related materials. Although the pressures to adopt the content of the new curriculum were strong, the support which teachers needed to achieve successful implementation was generally not provided.

Educational specialists in local education colleges who were supervising the actual work of school teachers had too great a workload to be able to offer meaningful and sustained advice to individual teachers. On the one hand, teachers were expected to faithfully implement the new curriculum, which meant covering the topics listed in a given sequence and at more or less the recommended pace and schedule. On the other hand, the overwhelming majority of teachers received no help other than through general orientation. Few were observed teaching or were given advice based on their performance

by local educational specialists. Most were given a full workload with no concessions for their inexperience. Therefore teachers were basically left alone to do whatever they could to cope with the new curriculum represented in the new textbooks.

Since there were too few professional or monetary incentives, teachers, including the experienced ones, spent little extra time and energy exploring the use of new methods or materials. In addition, many teachers were poorly prepared and many found they did not have the skills necessary for the new teaching materials. It was not surprising then that teachers relied heavily on the textbooks, frequently returning to the old ones, and adopting highly didactic teaching methods.

The lack of any meaningful support for teachers who were required to implement the new curriculum was exacerbated by the generally low professional capabilities of most teachers. Currently, the best qualified teachers in Chinese secondary schools were trained in the 1950s. While most have since retired, the few who do remain will also retire soon. The majority of teachers were middle aged (35 to 50 years old), and have received only very little if any formal pedagogical training. Thus, schools and educators lay their greatest hopes on young university teaching graduates. However, many of these young teachers have left for better paying jobs in other sectors. Those who remained in teaching did not plan to stay in the profession for too long. When geography was removed from the list of subjects tested for university entrance in 1991, fewer and fewer secondary school graduates chose geography as their preferred major for further study. It was unclear at the time of writing as to the impact that reintroduction of the geography examination in 1995 might have.

In any case, rejection of or preference for the study of geography has often had little to do with students' academic interest in the discipline. Students selected majors and universities that gave them the greatest chance for further study and for a good job assignment after graduation in their home city or one of the larger cities--usually Beijing, Shanghai, or Tianjin. For example, of the 82 geography graduates in 1994 who completed

their four years of teacher training in one particular university in Shanghai, 42 were assigned teaching positions in Shanghai secondary schools, 14 advanced into graduate programs, 13 gained jobs in various universities or research institutes, 7 found positions in the real estate business, and 6 went to work in other sectors such as food services and other activities (see Table 5.1). Interestingly, none of the 42 graduates who were assigned a teaching position in secondary schools in Shanghai were of Shanghai origin. According to one of the interviewees, despite the high demand for secondary school geography teachers in Shanghai, few students were willing to take such a position. Non-local graduates agreed to accept teaching jobs in Shanghai simply because it would be a "spring board" for them to leave their hometowns and live in the city. Although they had signed a two year teaching contract, many of these graduates openly admitted that as soon as they found better jobs, they would leave teaching right way. The poor status of secondary school teachers, especially in terms of income, was probably the main reason which discouraged young university graduates from working in the teaching profession. Teachers' salaries have consistently been ranked among the lowest compared to other occupations since the beginning of the reform period in 1978 (Lin & Fan, 1990).

Table 5.1

Employment Distribution of Geography Teaching Graduates From a Shanghai University
(1992-1994)

Year	Number of graduates	Teaching geography in Shanghai secondary schools	Entered graduate program	Employed by university, college, or research institute	Worked for CCP, or government	Employed by real estate agency	Other sectors including restaurants, banks, or publishers
1992	89	42	12	12	5	12	6
1993	59	24	8	6	2	14	5
1994	82	42	14	13	-	7	6

Source: From field notes

Implications

The implications of the findings from this study are significant. In view of the educational reforms now taking place in China, the influence of the examinations including the university entrance and graduation examinations must not be overlooked. Results of this research indicate that in addition to the provision of new textbooks and other teaching materials, the professional development of teachers, instructional reforms, and revision to the examinations are necessary for them to remain compatible with the goals of the new geography curriculum. In fact, without a wholesale transformation of the examination system there will be little incentive for teachers to implement the new curriculum or to change their teaching methods.

There is a popular saying among secondary school geography teachers in Shanghai: "Those who edit school textbooks do not teach, and those who design the university entrance and graduation examinations are not the textbook editors". While such a state of affairs was probably not intentional, the practical results were a conflict between the goals of the new geography curriculum, as embodied in the new textbooks, and the content and cognitive priorities apparent in the examinations, with inadequately prepared and largely unmotivated teachers (and students) caught in the middle. Therefore, it seems important that the content and structure of the geography examinations be coordinated along with changes to the curriculum. If the means of assessment do not measure the skills and understandings required by the curriculum, then the time and effort required to develop that new curriculum is meaningless. Since examinations will likely continue to be the primary means for selecting students and evaluating the effectiveness of schools and teachers, they will remain as the single most important influence on teaching methodologies. Therefore, changing the content, format, and cognitive level of examination questions would seem to be an essential component of curricular reform.

Specifically, the examinations should respond to and reflect the required cognitive levels and skills which more closely correspond to the goals of the new geography curriculum.

The provision of resources and in-service professional development should be incorporated into the process of curriculum development. The central pursuit of worthwhile goals has resulted in a concentration on the initial phase of curriculum development and a relative neglect of those activities designed to support subsequent implementation. Although there was some in-service professional development, it did not adequately provide the means to assist teachers in implementing the new curriculum. Teachers were provided with only a very limited range of support activities such as basic information on the new curriculum, teacher training programs, and the production of useful classroom resources. Thus, teachers were placed in a position where they were expected to implement a new curriculum with a limited understanding of it, and minimal or no support in terms of resources and training. The teacher training program is an important aspect in the success or failure of a new curriculum and should be a major concern. After the new curriculum is confirmed and promulgated, a far reaching and highly supportive program of professional development should be incorporated as an integral component of the implementation process rather than as a not very carefully considered after thought to the development of the new curriculum.

Conventional theories and experience of curriculum development in English speaking school systems, strongly suggests that teachers' understanding and participation in curriculum change are the basis for successful implementation of the new curriculum. Such participation is generally accepted as a critical factor in ensuring the success of curricular change (Marsh & Morris, 1991). Yet, teachers in China were not meaningfully involved in the curriculum development process. This in itself is not particularly problematic. It is perhaps unrealistic to expect teachers in China to be as involved in the curriculum development process as they might be elsewhere due to the centralized system of policy making and their generally low level of professional development. However,

teachers and other practitioners were not adequately accommodated or properly considered anywhere in the process examined in Shanghai. The practical problems and grass-roots realities confronting teachers in China need to be more seriously taken into account in the process of curriculum development.

Curriculum reform, like economic reforms in China, has not emerged from a single coherent comprehensive plan. This is perhaps due to the lack of a sound theoretical basis for change. Such pragmatism is usually associated with the lack of a sound theoretical basis and conceptual framework for change. This is also consistent with the rapid development of the economy and the sometimes traumatic political and social realities of such transformation. In order to meet the needs of economic development, educational policies have also been frequently adjusted. As a result, the school curriculum in China will likely undergo still further revision over the next few years. Shortening the school week from six to five days for the 1995-1996 school year was an example of the fluctuations of educational policy which will likely continue. This change was a by-product of a similar change to the work week in all other sectors. As a result, the new curriculum and related teaching materials were under revision once again to adapt to the new schedule. In fact, the reality of such rapid transformation in China also provides the unique opportunity to undertake further curriculum changes--perhaps another chance to incorporate some of the elements suggested here for deeper and more meaningful educational reforms. As China's most senior minister of education, Vice Premier Li Lanqing, recently remarked, "Chinese schools should seek to produce well-rounded students of high quality, rather than those who are only good at reproducing the textbook under exam conditions" (China News Digest, 1997a).

This statement betrays the fundamental contradiction inherent in the Chinese educational system and only vaguely hints at the potential solution. The onus is placed upon schools (and teachers) to produce the "well rounded" students, while the examinations, which are out of their control or influence, clearly do not converge with this

objective. Also, contrary to most of the theoretical models discussed above, the situation as revealed in Shanghai suggests that more intervention from the top may be required to effect change at the grass-roots. However, it is also very clear that resolving the key issues which have emerged from this study will also require more careful coordination among educational elites and curriculum developers, school-level officials, and classroom teachers.

BIBLIOGRAPHY

Anderson, R. A. (1984, October). Using case studies as an approach to analytical skills in high school geography. Paper presented at the Annual conference of the National Council for Geographic Education, Toronto.

Becher, T., & Maclure, S. (1978). The politics of curriculum change. London: Hutchinson.

Bloom, B. S. (1956). Taxonomy of educational objectives, The classification of educational goals, Handbook I: Cognitive domain. New York: David Mckay.

Boardman, D. (1986). Handbook for geography teachers. Sheffield: Geography Association

Central Committee of the Chinese Communist Party. (1985). Decision of the Central Committee of the Communist Party of China on the reform of the educational structure. Beijing: Foreign Languages Press.

Chen, C. (1993). World geography: Teacher's handbook I. Shanghai: East China Normal University Press (in Chinese).

Chen, G. J. (1983). On the problems of modernization of geography. Acta geographica sinica, 40 (3), pp. 264-272 (in Chinese).

Cheng, K. M. (1990). Financing education in Mainland China: What are the real problems? In Lin, B. J. & Fan L. M. (Eds.) Education in mainland China: review and evaluation. Taipei: Institute of International Relations. pp. 111-129.

Cheng, W. C. (Ed.). (1993). Extra-curricular activities: Geography. Shanghai: Science and Technology Press (in Chinese).

China News Digest (1997a). Chinese Vice Premier Li Lanqing urges shift from exam-based education. URL: <http://www.cnd.org> April 11.

China News Digest (1997b). Research finds rote education dampens student creativity. URL: <http://www.cnd.org> April 30.

Chu, S. T. (1993). Brief introduction to geography teaching materials in nine year compulsory education in developed areas. Unpublished report of the Shanghai Geography Teaching Materials Committee (in Chinese).

Chu, S. T. (1994). Geography of China: Book I. Shanghai: East China Normal University Press (in Chinese).

Chu, S. T. (1995). Brief introduction to geography teaching materials in nine year compulsory education in developed areas. Geography teaching: Vol. 1. Shanghai: East China Normal University Press. pp. 4-5 (in Chinese).

Dantonio, M. (1990). How can we create thinkers?: Questioning strategies that work for teachers. Bloomington: National Educational Source

Davies, I. K. (1982). The CLER model in instructional development. Viewpoints in teaching and learning, 58 (4), pp. 62-69.

Deng, X. P. (1985). Selected works. Beijing: Foreign Languages Press.

Doll, R. C. (1986). Curriculum improvement: Decision making and process. Newton: Allyn and Bacon.

Fan, L. M. (1990). Secondary education in mainland China. In Lin, B. J. & Fan, L. M. (Eds.), Education in mainland China: Review and evaluation. Taipei: Institute of International Relations. pp. 111-129.

Fien, J., Gerber, R., & Wilson, P. (Eds.). (1984). The geography teacher's guide to the classroom. Melbourne: Macmillan.

Fowler, R. H. (1989). Curriculum reform in social studies: An analysis of the cases of Saskatchewan and British Columbia. Canadian journal of education, 14 (3), pp. 322-337.

Fullan, M. K. (1991). The new meaning of educational change. New York: Teachers College Press.

Galenson, W. (Ed). (1993). China's Economic Reform. San Francisco: The 1990 Institute.

Grundy, S. (1987). Curriculum: Product or praxis? London: Falmer.

Hajdu, J. G. (1977). Growth centers and the use of decision making case studies in school geography. Geographical education. 3, pp. 61-73.

Hall, D. (1986). Advanced level examinations. In Boardman, D. (Ed.). Handbook for geography teachers. Sheffield: Geographical Association.

Hargreaves, A. (1985). Cultures of teaching. In Ball, S. J., & Goodson, I. F. (Eds.). Teachers' lives and careers. New York: Routledge. pp. 1-31

He, B. C. (1991). China on the edge: The crisis of ecology and development. San Francisco: China Books & Periodicals.

Henze, J. (1987). Educational modernization as a search for higher efficiency. In Hayhoe, R. & Bastid, M. (Eds.), China's education and the industrialized world. New York: OISE Press. pp. 252-270.

Henze, J. (1990). Modernization and the contribution of education in mainland China. In Lin, B. J., & Fan, L. M. (Eds.), Education in mainland China: Review and evaluation. Taipei: Institute of International Relations. pp.1-23.

Ho, P. T. (1962). Ladder of success in imperial China: Aspects of social mobility, 1368-1911. New York: Columbia University Press

Hough, W. M. (1978). Power and influence in the change process. Educational leadership, 36 (1), p. 59.

Hu, S. M., & Seifman, E. (Eds.). (1976). Toward a new world outlook: A documentary history of education in the Republic of China, 1949-1976, New York: AMS Press.

Johnson, F. W., & Johnson, R. T. (1994). Learning together and alone. USA: Allyn and Bacon.

Johnson, D. W., Johnson, R. T., & Holubec, E. (1993). Cooperation in the classroom, (6th. Ed.). Edina: International Book Company.

Jones, M. (1986). Evaluation and assessment in geography In Boardman, D. (Ed.). Handbook for geography teachers. Sheffield: Geographical Association.

Leung, Y. M. J. (1991). Curriculum development in the People's Republic of China. In Marsh, C. & Morris, P. (Eds.), Curriculum development in East Asia. London: Falmer Press. pp. 61-81.

Li, J. P. (1994). Building a bridge to the future (Reference is incomplete pending a letter from Shanghai) (in Chinese).

Lidstone, J. G. (1985). A study of the geography textbooks by selected teachers in English secondary schools. Unpublished Ph.D. Dissertation, University of London.

Lidstone, J. G. (1977). An evaluation of the geography curriculum offered to second and third year pupils in a south London junior high school based on volume two and three of the Oxford Geography Project text books. Unpublished M. A. Thesis, University of London.

Lin, B. J., & Fan, L. M. (Eds.). (1990). Education in mainland China: Review and evaluation. Taipei: Institute of International Relations.

Liu, S. H. (1984). Geography of China, Vol. 1. Beijing: People's Press (in Chinese).

Long, M. (1971). The interests of children in school geography. Geography. 5, pp. 177-189.

Lu, D. D. (1987). Research trends in the regional study of economic geography in China. Geographical research, 6 (1), pp.1-9 (in Chinese).

Lyman, L., & Foyle, H. (1990). Teaching geography using cooperative learning. Journal of Geography, 90(5), pp. 223-226.

Lynn, P. (1992). Teaching and modernization in contemporary China. In Hayhoe, R. (Ed.), Modernization: The Chinese experience. Oxford: Pergamon. pp. 9-1.

Maccoll, P. (1984). Selecting resources for geography teaching. In Fien, J., Gerber, R., & Wilson, P. (Eds.), The geography teacher's guide to the classroom. Melbourne: Macmillan. pp. ?

Mak, G., & Lo, L. (1996). Education. In Yeung, Y. M., & Sung, Y. W. (Eds.), Shanghai: Transformation and modernization under China's open policy. Hong Kong: The Chinese University Press. pp. 375-398.

Marsh, C., & Morris, P. (1991). Curriculum development in east Asia. London: Falmer Press.

Marton, A. M. (1990). Analysis of the role of the university entrance examinations in geography teaching in China's middle school. Unpublished Masters Thesis, University of Victoria.

Morris, P. (1986). Identifying the strategy of curriculum development within a highly centralized educational system, International journal of educational development, 6(3), pp. 171-82.

Qi Y. C. (1995). Subject categories for the university entrance exams in Shanghai. Evening newspaper, April 24, p. 14 (in Chinese).

Rawling, E. (1986). Teaching and learning in the classroom. In Boardman, D. (Ed.), Handbook for geography teachers. Sheffield Geographical Association.

Reform Office. (1990). Report of the investigations of the first phase of curriculum reforms. In Reform Office (Ed.), Shanghai primary and secondary school curriculum and teaching materials reform. Shanghai: Shanghai Education Press. pp. 9-17 (in Chinese).

Roberts, E. (1986). Talking, reading and writing. In Boardman, D. (Ed.), Handbook for geography teachers. Sheffield: Geography Association.

Rudduck, J. and Kelly, P. (1976) The dissemination of curriculum development. Slough: NFER.

Shanghai Curriculum and Teaching Materials Reform Committee. (Ed.). (1990). Shanghai primary and secondary school curriculum reform plan. In Reform Office (Ed.), Shanghai primary and secondary school curriculum and teaching materials reform. Shanghai: Shanghai Education Press. pp. 26-40 (in Chinese).

Shen, Y. C., Zao, D. K., Tan, J. N., & Liao, K. (1980). The orientation and task of geography in China: A discussion of some problems. Acta geography sinica, 35 (2), pp. 108-115 (in Chinese).

Shin, S. H., & Hoh, K. C. (1991). Curriculum development in South Korea. In Marsh, C., & Morris, P. (Eds.), Curriculum development in East Asia. London: Talmer Press. pp. 129-160.

Slavin, R. E. (1990). Cooperative learning. New Jersey: Prentice Hall.

State Statistical Bureau. (1996). Shanghai statistical yearbook. Beijing: Statistics Press.

Taba, H., Levine, S., & Elzey, F. F. (1964). Thinking in elementary school children. San Francisco: US Office of Education.

Teaching Research Office. (1994). Junior secondary school geography graduation examination guide. Shanghai: Shanghai Education Bureau.

Thøgersen, S. (1990). Secondary education in China after Mao: Reform and social conflict. Denmark: Aarhus University Press.

Urich, T. R., Mitchell, M., & LaVorgna, J. P. (1983) PARA: A mutually reinforcing model for self-directed changed. Bulletin of the national association of secondary school principals 67 (464), pp.104-107.

Wang, S. H. (1990a). Speech at the meeting to establish the Primary and Secondary School Teaching Materials Reform Committee. In Reform Office, (Ed.), Shanghai primary and secondary school curriculum and teaching materials reform. Shanghai: Shanghai Education Press. pp. 1-17 (in Chinese).

Wang, S. H. (1990b). Explanation of the Shanghai primary and secondary school curriculum reform plan. In Reform Office (Ed.), Shanghai primary and secondary school curriculum and teaching materials reform. Shanghai: Shanghai Education Press. pp. 42-54 (in Chinese).

Wang, T. (1986). Wise policies for promoting education's contribution to economic and social development. In Central Institute of Educational Research (Ed.), China educational sciences. Beijing: Educational Sciences Publishers pp. 31-41.

Wei, J. W. (Ed.). (1994). Chinese geography: Teacher's handbook I. Shanghai: East China Normal University Press (in Chinese).

Wise, A. (1977). Why educational policies often fail: The hyperrationalization hypothesis. Curriculum studies 9(1), pp. 43-57.

Wong, K. Y. (1991). Curriculum development in Singapore. In Marsh, C., & Morris, P. (Eds.). Curriculum development in East Asia. London: Talmer Press. pp. 129-160.

World Bank. (1985). Issues and prospects in education. In China: Long term issues and options. (Annex to the World Bank Report). Washington, D. C.: World Bank.

Yeh, K. C. (1993). Economic reform: An overview. In Galenson, W. (Ed.), China's economic reform. San Francisco: The 1990 Institute. pp. 11-32.

You, M. J. (1994). Development and reform of China's school curriculum and teaching materials. In Curriculum Materials Research Centre of the State Education Commission (Ed.), Curriculum research. Beijing: Educational Sciences Press. pp. 1-9.

APPENDIX A

Survey Questionnaire of

Geography Teaching in Shanghai

(February 1995)

Part I. General Situation

1. The name of your school is _____( ). (only choose one)

(1) high school
(2) junior high
(3) senior high

2. Your name _____(optional), and professional title: _____, age __, teaching experience _____ (years), education background _____( ) (choose one only from below):

(1) university degree
(2) training school
(3) other (please specify)_____

3. In this term, you are teaching grade _____, with _____classes, and grade _____, with _____classes. The average number of students in your classes is _____. You teach a total of _____ lessons a week.

4. The textbook(s) I am using is (are): _____(select as many as appropriate)

(1) Geography of China Vol.2;
(2) World Geography Vol.2.
(3) Geography (senior 2) Vol.2.
(4) Physical Geography (grade 6)
(5) Shanghai Regional Geography
(6) Social Studies
(7) Extra Curriculum
(8) Others (be specific)_____.

5. Do you teach extra curricular classes? ( ) Yes; ( ) No. If yes answer below:

How many students are in the class?_____
Which grades are they in?_____
What kind of materials do you use?_____

Part II. Please choose only one from the listed items:

1. With regard to the new textbooks, I am: _____( )

(1) satisfied
(2) neutral
(3) dissatisfied

2. I think the content of the new textbooks is:_____( )

(1) too complicated
(2) just right
(3) too simple

3. While teaching, I _____( ).

(1) only use the textbooks
(2) use textbooks as well as other references (i.e. newspaper articles, magazines)
(3) others (please specify)_____

4. I think that it is unnecessary to use materials other than the textbooks. ( )

(1) agree
(2) disagree
(3) others (please specify)_____

5. Do you write your own teaching materials ( )

(1) yes
(2) never

6. Which teaching methods do you use most? ( )

(1) teacher and students discussing together in the class
(2) lecturing
(3) lecturing and student discussion
(4) student self study

Among the above choices, select one only for each black below:
Before using the new textbooks, I used _____,_____ methods the most in my teaching. Now I apply _____, _____teaching methods the most in practice.

7. Since I began teaching I have always used the same methods in the class. ( )

(1) True
(2) False

8. In the class, I mainly use: _____( ) (only choose one).

(1) pictures and maps from the textbooks
(2) wall maps and others (i.e. from magazines and other reading materials)
(3) the projector
(4) over-head transparencies
(5) video tapes
(6) the computer
(7) others (please specify) _____

9. The professional training I receive is useful for my teaching. ( )

(1) True
(2) False

10. My students like the new textbook(s). ( )

(1) agree
(2) neutral
(3) disagree

11. My students think that the content of the new textbooks is: ____( )

(1) difficult
(2) just right
(3) easy

APPENDIX B

Geography Lessons Observed in Shanghai
(1994-1995 School Year)

	Sex	Age	Training	School	Grade	Date	Topic
1	F	45	college	Yuling	6	Oct. 26	Earth's Rotation
2	F	43	college	Beihai	7	Dec. 1	West Asia
3	F	42	college	Lantian	7	Dec. 8	West Asia
4	M	22	university	Zhenglu	8	Mar. 2	Yangtze
5	F	23	university	Meilong	11	Mar. 7	World Industry
6	F	23	university	Meilong	6	Mar. 7	Earth's Rotation
7	F	25	university	Hutai	8	Mar. 10	Local Geography
8	M	28	university	Hutai	7	Mar. 10	England
9	F	25	university	Chaoyang	7	Mar. 14	Russia
10	F	25	university	Nanhai	7	Mar. 16	England
11	F	24	university	Jingyuan	11	Mar. 23	Climate

Source: From field notes
Note: All lessons observed were in schools in Putuo District.

APPENDIX C

1994 Shanghai City-Wide Junior Secondary School Geography Graduation Examination

(For Schools Using the New Textbooks)

Full Mark: 100 points, Time: 60 minutes

Section I: Closed Book

Full Mark: 40 points, Time: 20 minutes

Part I. Fill in the blanks (1 point for each blank, total is 10 points)

1. The earth is an imperfect sphere which is flat on _____ , and bulges in _____.

2. China is located on the east of the _____ continent, and the West coast of the Pacific Ocean. Its land area is ____ square kilometers.

3. China's "Coal Sea" province is _____ ; the special economic zone of Fujian is _____ .

4. The main characteristics of China's climate is: The climate is complex with many types, and ____ is outstanding; The distribution of water resources regionally is more in the south and less in the north, and _____ .

5. China's political and cultural centre is _____ ; the largest economic centre is _____ .

Part II. Multiple choice (1 point for each question, and a full mark is 12 points)

1. The one that has the longest daylight hours of the year is ....( )

   A. Spring B. Summer
   C. Autumn D. Winter

2. Between 30°N and 40°N and between 30°S and 40°S, the main climate type is .....( )

   A. tropical rainforest B. tropical desert
   C. semi-tropical monsoon D. Mediterranean

3. The continent that has its climate distributed symmetrically from north to south is ...( )

A. Asia B. Europe C. Africa D. Antarctica

4. The Yangtze and Yellow Rivers flow into the ..... ( ) respectively.

A. South Sea and East Sea
B. East Sea and Yellow Sea
C. Yellow Sea and Bohai
D. East Sea and Bohai

5. The plain on which the Yellow River is used to irrigate farming is the .....( )

A. Northeast plain
B. Huabei plain
C. Ningxia plain
D. Fanyanhu plain

6. The largest canola production in the world is in the .....( )

A. Yellow River valley
B. Pearl River valley
C. Yangtze Delta
D. Liaohe valley

7. China has the world's highest mineral reserves of.....( )

A. iron ore B. copper ore
C. lead and zinc ore D. rare earth ore

8. China's largest offshore fishing ground is:....( )

A. Bo-Huang Sea fishing ground
B. Golf of Tongkin fishing ground
C. Zhoushan fishing ground
D. South Sea coastal fishing ground

9. Qingling-Huihe has become a division line of one of following four dry-wet regions. It is .....( )

A. humid and semi-humid region
B. semi-humid and semi-dry region
C. semi-dry and dry region
D. semi-humid and semi-dry region

10. Dayu, Jiangxi province, produces mainly ...( )

A. iron ore B. antimony ore
C. lead and zinc ore D. tungsten ore

11. The middle point of the coastal navigation line in China is ....( )

A. Tianjing port
B. Shanghai port
C. Dalian part
D. Qingdao port

12. In Shanghai, the protected taxation zone of Waigaoqiao is in ....( )

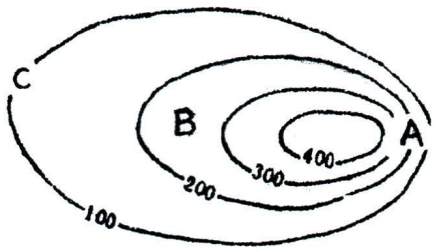
A. Jiading District
B. Baoshan District
C. Minhang District
D. Pudong New Area

Part III. Draw a line to match the items in the left column with the items in the right column (The full mark is 4 points, and each connection is worth 1 point)

Northeast area	China's largest coal base
Huabei area	its railways are laid out in a circular pattern
Southwest area	has great advantages in developing an export oriented economy
Huanan area	China's largest heavy industrial base

Part IV. Reading and completing maps (total: 14 points)

1. Use the diagram to answer the following questions (2 points):

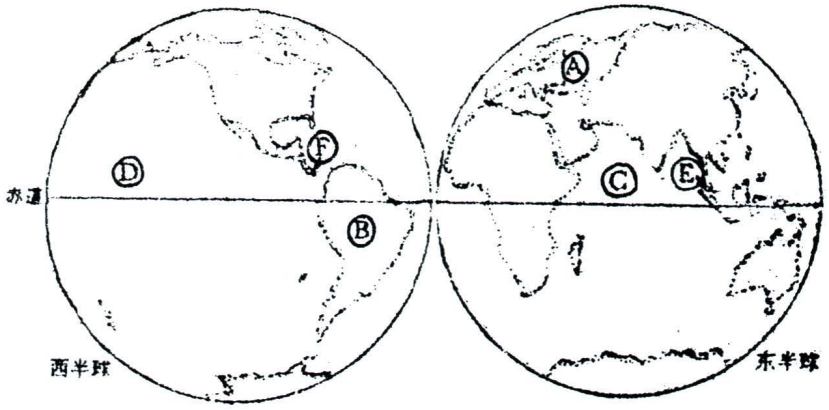


The location of A is at .....( )

(A) abrupt slope (B) gentle slope

The relative height between B and C is ____ meters

2. Use the map to answer the following questions (6 points):

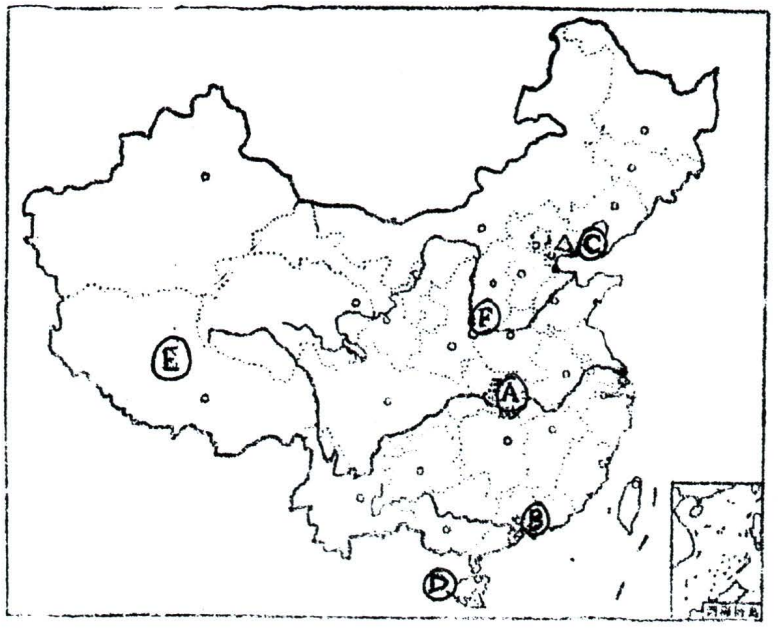


Continents: A. _____ B. _____

Oceans: C. _____ D. _____

Strait: E. _____ Canal: F. _____

3. Use the map to answer the following questions:



The commercial grain production bases: A. _____ B. _____

The salt grounds: C. _____ D. _____

The provincial level administrative region: E. _____

River: F. _____

Section II. Open Book

Full mark: 60 points, Time: 40 minutes

Part I. Multiple choice (2 points for each correct answer Total: 20 points)

1. In the solar system, the only celestial body that has life is .....( )

   A. Sun B. Earth C. Moon D. Mercury

2. In South America, the country that is the largest in terms of its area, has the highest population, and the most advanced economy is .....( )

   A. Brazil B. Cuba C. Chile D. Colombia

3. The administrative region that is located in the most northeast area of China is.....( )

   A. Hebei Province B. Heilongjiang Province
   C. Jilin Province D. Liaoning Province

4. The characteristics of the population distribution in China is .....( )

   A. densely distributed in the east, and scattered in the west
   B. scattered in the east, and dense in the west
   C. scattered in the southeast area, and dense in the northwest area
   D. it is distributed evenly

5. The Gaoshan minority people in China are mainly living in .....( )

   A. Yunnan Province B. Shanxi Province
   C. Guizhou Province D. Taiwan Province

6. The highest basin above sea level that is located in the northeast part of the Tibet plateau of China is .....( )

   A. Taklimakan Basin
   B. Dzungaria Basin
   C. Qaidam Basin
   D. Sichuan Basin

7. The region in which the characteristic landform is described as "San Shan Jia Liang Peng" is .....( )

   A. Northeast region B. Northwest region
   B. Inner Mongolia C. Xinjiang

8. The largest cultivated lands in China are distributed mainly in the .....( )

A. hills and river basins in the east monsoon area
B. plains and basins in the east monsoon area
C. hills and plateau in the non-monsoon region
D. plains and basins in the non-monsoon region

9. The regions that have implemented China's "three northern protected forest systems" are .....( )

A. Xibei, Hubei, and Dongbei
B. Xibei, Hubei, and Hebei
C. Xibei, Huabei, and Hubei
D. Xibei, Dongbei, and Hebei

10. Two railways that meet and cross in Shanghai are the: .....( )

A. Jingguang line and Huhang line
B. Jinghu line and Huhang line
C. Jingguang line and Zhegan line
D. Jinghu line and Zhegan line

Part II. Draw a line to match the items in the left column with the items in the right column (each correct connection is 1 point, and the total mark is 8)

1. Matching provinces with their capitals:

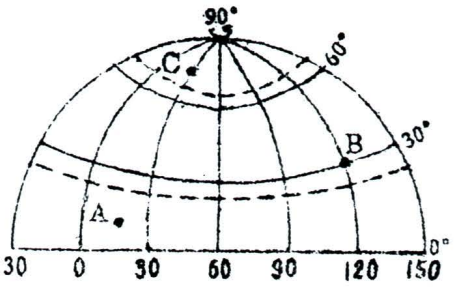
Jiangxi	Chengdu
Sichuan	Nanchang
Hubei	Lanzhou
Gansu	Wuhan

2. Matching countries with their individual outstanding resources and products:

Russia	the most rice exported in the world
Australia	the most sheep-wool exported in the world
Thailand	the most forest area in the world
South Africa	the highest gold production in the world

Part III. Reading and completing maps (32 points)

1. Use the map to answer the following questions (5 points):



(1) Among A, B, and C, ( ) is located in the tropics; and ( ) is located in the area which has polar days and nights.

(2) The latitude and longitude of B are _____ and _____ respectively.

(3) C is located at B's _____direction.

2. Use the map to answer the following questions:

(1) This is a map of .....( )

A. United States
B. Russia
C. France
D. Canada

(2) The mountains on the map are called ....( )

A. Rocky Mountains.
B. Apennines
C. Ural Mountains
D. Appalachian Mountains.

(3) The river on the map is called the .....( )

A. St. Lawrence B. Nile
C. Danube D. Mississippi

(4) The most developed region of this country is the .....( )

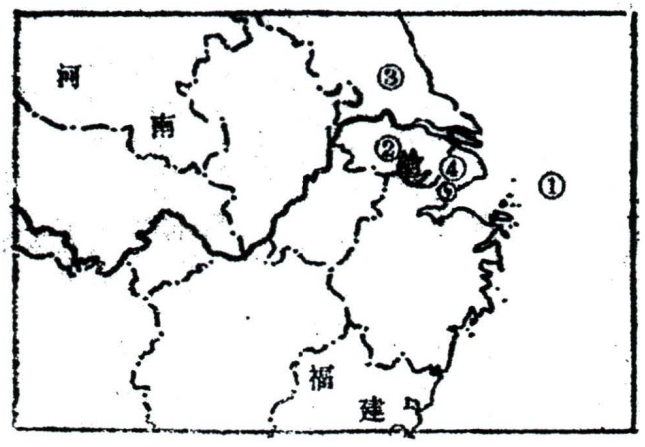
A. Northeast region B. Southeast region
B. Northwest region D. Southwest region

(5) The region which has the majority of ethnic Chinese in this country is .....( )

A. Paris B. Los Angeles C. San Francisco D. Marseilles

(6) The aircraft and space flight industrial base as well as electronic industrial base are located at the west coast on the _____ Ocean. The capital of this country is _____.

3. Use the map and the "China Atlas" (p.32) to answer the following questions (8 points):



(1) The landform of this region is mainly ...( )

A. mountains and plains
B. plateau and basin
C. plain and hill
D. basin and mountains

(2) In this region, 1/3 of the water transportation is via inland water. Its main waterway is .....( )

A. Yellow River B. Huai River
C. Yangtze River D. Ming River

(3) The local grain product mainly is ...( )

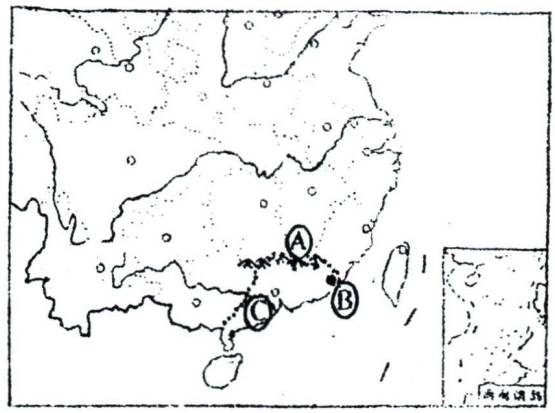
A. wet rice B. highland barley
C. corn D. barley

(4) Number (1) on the map represents ___ sea, and (2) represents ____ lake.

(5) The nation's first nuclear power station located in this region is called ____ , and is shown with a number _____ .

(6) The number (3) is located in _____ Province.

4. Use the "China Atlas" (pages 3, 7, and 9) to answer the following questions:



(1) The neighboring province with Hongkong and Macao is ____ ; the Qiongzhou Haixia in this province is next to ____ Province.

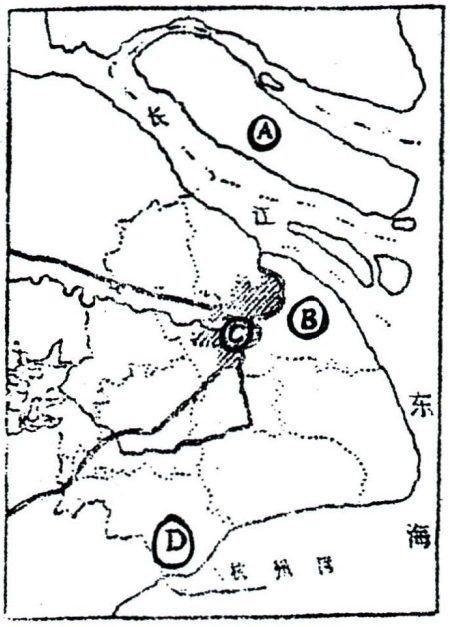
(2) From the dry-wet region map, this province belongs to ____ ; and from the temperature zone map, this province is located at tropic zone _____ and _____ .

(3) The letter A is the location of _____ mountain.

(4) Letter B is a location of _____ city, which is one of the five national special economic zones.

(5) Letter C represents ____ river, which flows through this province and then into the South Sea.

5. Use the map to answer the following questions(5 points):



(1) The letter that represents the centre of Shanghai city is _____ ;

(2) The letter that represents Pudong new area is ___ ; Pudong new area is located east of the _____ River, which is connected to Puxi with the newly built Nanpu Bridge and _____ Bridge.

(3) The south of Shanghai is adjacent to _____ Province.

APPENDIX D

1994 Shanghai City Wide Junior Secondary School Geography Graduation Examination

(Open Book)
(For Schools Using the Old Textbooks)

Full Mark: 100 points, Time: 60 minutes

Part I. Fill in the blanks (each question is worth 2 marks for a total of 24 marks).

1. On the (terrestrial) globe, the lines connecting the south pole and north pole are called ____line, the lines parallel to the equator are called_____.

2. The contour lines on different landforms appear differently. At an abrupt slope, the lines are _____(dense or few and scattered).

3. Facing a map, generally we determine its top is the___, and its right is the _____.

4. China has a large sea area,_____sea is its enclosed sea, _____strait is also its enclosed sea.

5. Read the "Administrative Region Map" on page 5 of the "China Atlas", China's border city "Er Lian Hao Te" is located in _____ autonomous region, and the port city of Dalian is in _____ Province.

6. Read the "January Isothermal Line Map" on page 11 of the "China Atlas". The average January temperature in Ha'erbin is __°C, and in Kunming, it is __°C.

7. Traditionally, the region that is evidently affected by the _____ (winter or summer) monsoon is regarded as a monsoon region. In the monsoon region, the high temperature period coincides with its long rainy season.

8. China's "Coal Sea" province is_____; the large oil field near the mouth of the Yellow River is called the _____ oil field.

9. For the reform and opening-door policies, Shanghai has developed a convenient transportation system. Besides the land gate of the Shanghai railway station, the air gate is _____ International Airport, and the water gate is the nation's biggest _____ water passenger transportation station.

10. Read the map on page 5 in the "World Geography Textbook, Vol.2": Japanese industries are mainly located in a narrow area from south of _____ island to the north of _____.

11. Read the map "Distribution of the World's Main Fishing Grounds" on page 90 of "World Geography Textbook, Vol. 2". The _____fishing ground is located at the higher latitudes of the European sea area, and the Peruvian fishing ground is distributed at the lower latitude areas of ____ (continent), along the west coast of the Pacific Ocean.

12. Read the map "The Antarctic Continent" on page 40 of the "World Atlas". China has established an Antarctic observation station. Its name is ___ and located on the Antarctic Continent of the Southern Indian Ocean. Along the coast of the Antarctic Continent and islands nearby, there are many birds. The majority are _____ .

Part II. Multiple choice (only one answer is correct in each of the questions. Each question is worth 2 marks, and total marks are 24).

1. The longitude of the prime meridian is.....( )

   A. 0° B. 20°W C. 160°E D. 180°

2. From the map of "China's Administrative Regions and Transportation" on page 5 of the "China Atlas", the straight distance between Shanghai and Guiyang is about 5 cm, so the actual distance should be.....( )

   A. 15 km B. 150 km C. 1,500 km D. 15,000 km

3. From the Map of "The Chinese Population" in the "China Atlas" (p.9), population is distributed unevenly. The characteristics of population distribution are:..... ( )

   A. more in inland areas, and fewer along the coast
   B. more in the mountain areas, and fewer in plain regions
   C. more in northwest area, and fewer in southeast
   D. more in southeast region, fewer in northwest region.

4. On the map of "China's Landforms" (on page 7-8) of the "China Atlas", on the northwest Tibet Plateau, is China's highest basin above sea level. Its name is .....( )

   A. Talimu Basin B. Zhunge'er Basin
   C. Caidamu Basin D. Sichuan Basin

5. Qingling-Huaihe is an important division line in China's geography. It is a division line of .....( )

A. the tropics and sub-tropics
B. sub-tropical and warm temperature zone
C. semi-humid region and semi-dry region
D. 400 mm annual even quantity line of precipitation

6. China's most important cotton production base is located at .....( )

A. Huabei Plain B. Songneng plain
C. Sanjiang plain D. Pearl River Delta region

7. There is a bag of medicine that has to be delivered from Shanghai to Chongqing for a medical emergency. The most convenient transportation means is:.....( )

A. via the Yangtze River B. via air
C. via railway D. via roads

8. The protected taxation zone of Waigaoqiao in Shanghai, is located in ..... ( )

A. Jiading B. Baoshan
C. Minhang D. Pudong New Area

9. From the map of "World's Climate Types" in the "World Atlas" (p.8), the continent which has a symmetric climate from north to south is .....( )

A. Asia B. Europe C. Africa D. North America

10. The most important industrial zone in Germany, which is also a well known industry zone in the world is .....( )

A. Ruhr
B. Hamburg
C. Munich
D. Berlin

11. In South America, the country which has the largest area, highest population, and best economy is .....( )

A. Cuba B. Brazil C. Chile D. Argentina

12. The county which exports the most sheep's wool in the world is .....( )

A. Russia
B. South Africa
C. Australia
D. France

Part III: Use a line to match the items in the left column with the items in the right column (one correct connection is worth 1 point):

1.

division of east and west hemisphere	0° latitude
division of south and north hemisphere	30° latitude
division of mid and low latitude	Polar circle
division of semi-warm and cold temperature zone	20°W and 160°E

2.

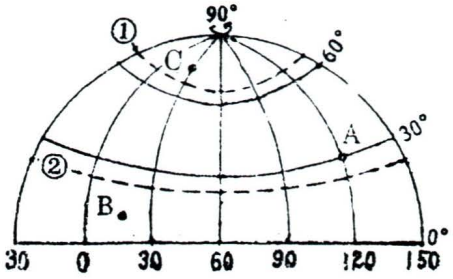
Songhua River	Rich flow, long period of high water season
Pearl River	contains small amount of sand; long ice period
Yellow River	Water resource relies on melted ice/snow, inland water
Talimu River	contains a lot of sand; short period of flood season

3.

Indonesia	the largest archipelago county in the world
Malaysia	the world's only island state
Singapore	the world's highest tin production
Thailand	the world's largest rice producing country

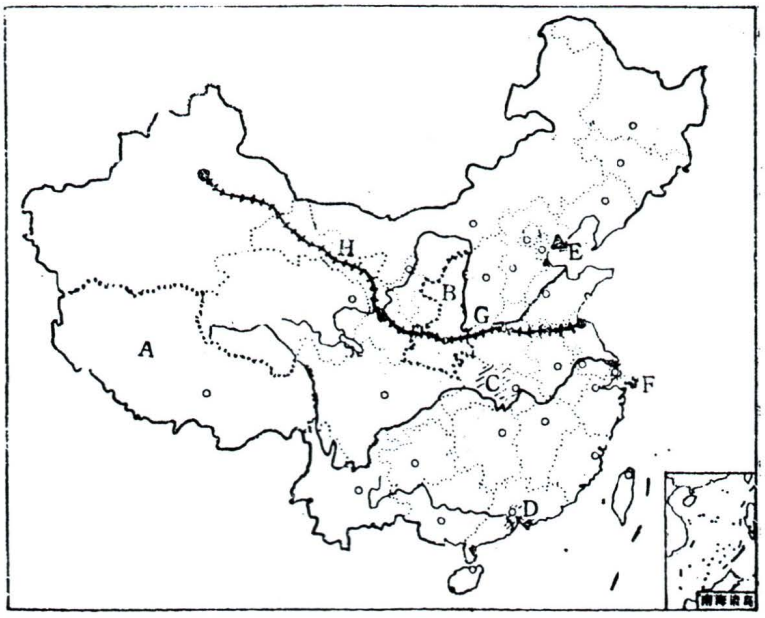
Part IV. Reading and completing maps and charts

1. Use the diagram to answer the following questions (6 marks):



Among A, B, and C, the one located in the tropics is ___ , and the one located in the warm temperature zone is __; The latitude and longitude of A are __, __ , respectively; In terms of relative location, B is situated to the ____ (direction) of C; Between line (1) and line (2), ___ presents the most northerly division of direct sunlight.

2. Use the map to complete following questions:

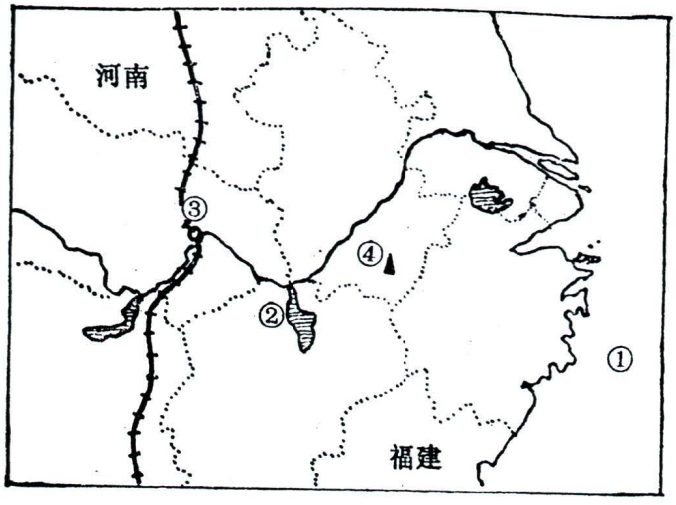


The name of the provincial level administrative divisions: A: _____ B: _____ .

The national commercial grain bases: C: _____ D: _____ .

Salt ground: E: ____; Fishing ground: F: _____ ; Railways: G: _____ , H: _____ .

3. Use the maps in the "China Atlas" (pp. 21-22) to answer following questions:



The main landform of this region is .....(..)

A. basin and highland
B. plain and low hills
C. plain and basin
D. mountains and basins

The one called "golden water way" is..... (..)

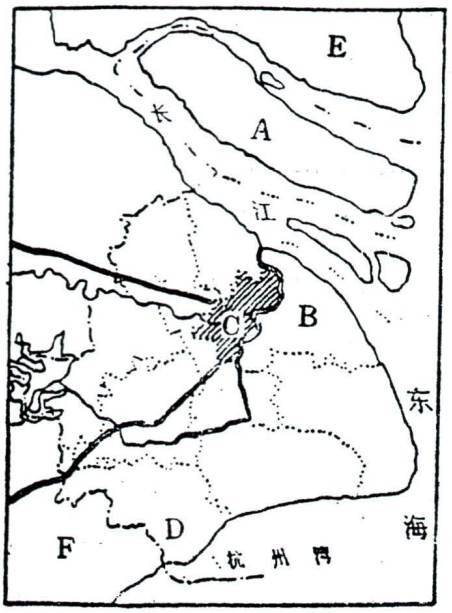
A. Yellow River
B. Huai River
C. Yangtze River
C. Grand Canal

The most important grain in this region is .....(..)

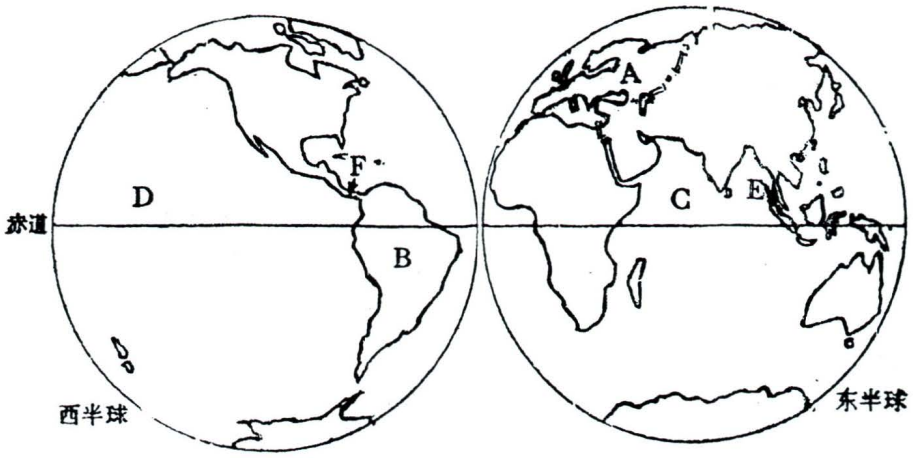
A. wet rice
B. highland barley
C. corn
D. Chinese sorghum

4. Use the map on page 1 of "Shanghai Regional Geography " to answer the following questions:

Among A, B, C, and D, the city centre is _____ , Pudong new area is represented with _____ ; Pudong and Puxi is divided by ____ river, which is connected by _____ bridge; Shanghai's neighboring province E is____, and F is _____ Province.



5. Use the diagram to answer the following questions:

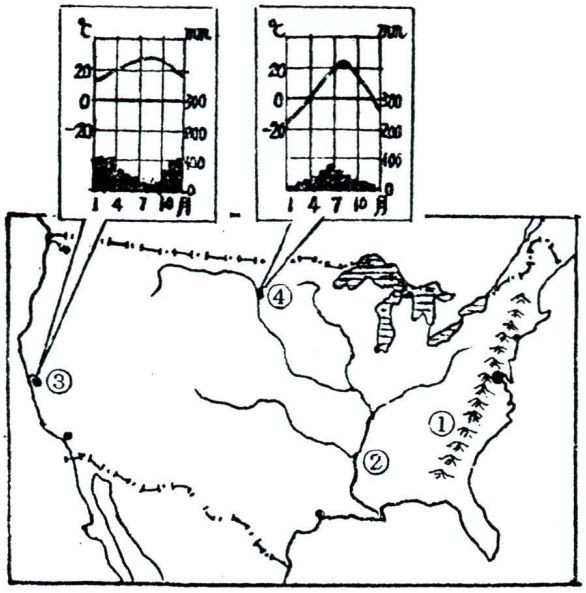


The names of continents:
A. _____B. _____ .

The names of oceans:
C _____ D. _____.

Others:
E. _____ strait; F. _____ canal.

6. Use the map and charts to answer the following questions:



On the map, number (1) represents .....( )

A. Rocky Mountains
B. Big Watershed
C. Sierra Nevada
D. Appalachian Mountains

On the map, number (2) represents .....( )

A. St. Lawrence River
B. Mississippi River
C. Colorado River
D. Amazon River

The types of climate at number (3) and (4) are _____and ____ respectively.

Industry in the USA is distributed mainly in the _____ region, and the capital of this region is _____.

APPENDIX E

Cognitive Level Descriptions and Some Examples

Benjamin Bloom and his colleagues (1956) published a well known handbook describing a taxonomy of educational objectives. Bloom's Taxonomy, as it came to be known, was an attempt to classify educational objectives into implied hierarchies of cognitive and affective functioning. It is the cognitive domain upon which the analysis in this thesis will focus although it must be realized that the cognitive and affective domains are interwoven. The levels in Bloom's Taxonomy in the cognitive domain from lowest to highest are: knowledge; understanding; application; analysis; synthesis and; evaluation. For the purpose of analyzing the city-wide graduation examinations in geography these levels have been sorted into the three levels of knowledge, understanding and application, and higher mental processes. The following is an explanation of each of these levels with some examples.

1. Knowledge

Knowledge is defined as including those test questions which emphasize the remembering, either by recognition or recall, of ideas, material, or phenomena. Incorporated at this level is knowledge of terminology, specific facts (dates, places, events, capitals, etc.), conventions, classifications and categories, criteria, methods of inquiry, principles and generalizations, and theories and structures. This level does not presuppose understanding and should be equated with rote memorization.

2. Understanding and Application

Understanding and application are considered as transitional steps between knowledge and the higher intellectual skills of analysis, synthesis and evaluation.

Understanding refers to responses that represent a comprehension of the literal message contained in a communication. This level of question requires the student to translate, interpret, or extrapolate.

(a) Translation is the process of taking an idea and communicating it in a new form.

Examples: Making a written statement after studying the plan of your school; making a graph from a set of data; giving a new example of anything.

(b) Interpretation involves the reordering of ideas (inferences, generalizations, or summaries)

Examples: Given a graph or a paragraph of prose, state whether each of the following statements are true or false; describe how an area might change ecologically from a sand dune to a deciduous forest.

(c) Extrapolation requires the projection of the effects of certain conditions based on an understanding of trends or tendencies.

Examples: What might life be like in China today if the Qing Dynasty rulers were still in power? ; given a graph showing the relationship between population growth and rice production in China over the past 20 years forecast the situation for 2005.

Application requires the student to apply an appropriate abstraction (theory, principle, idea, method) to a new situation.

Examples: What geography principles can be utilized to deal with the problem of desertification in Gansu and Nignxia provinces and how?; predict what might happen to the surrounding physical and human environment if a dam was built on the Yangtze River near Wuhan.

The new aspect of a problem must be emphasized for this level of questioning. If the problem has been discussed previously then the question will be at the level of knowledge, or at best, comprehension.

3. Higher Mental Processes

Included at this level of thinking are the processes of analysis, synthesis and evaluation.

Analysis involves questions that requires students to recognize unstated assumptions, to distinguish facts from hypotheses, to distinguish conclusions from statements that support them, to recognize which facts or assumptions are essential to a main thesis or to the argument in support of that thesis, and to distinguish cause and effect relationships from other sequential relationships.

Examples: Which points in the following argument are facts and which are assumptions?; given data and a conclusion, which of the following assumptions would be necessary to justify the conclusion?; examine the photograph of the Guilin region and state what geographical principles and concepts have led to the formation of the features observed.

Synthesis involves the production of a unique communication, the ability to propose ways of testing hypotheses, the ability to design an experiment, the ability to formulate and modify hypotheses, the ability to pull together all the elements or components necessary to create a new and complete whole, and the ability to make generalizations.

Examples: Create a model that would illustrate the principles of fluvial deposition; devise a plan for solving the pollution problem in Shanghai's Suzhou Creek.

Evaluation requires students to make judgments about the value of ideas, solutions, and methods. It involves the use of criteria as well as standards for appraising the extent to which details are accurate, effective, economical, or satisfying. Evaluation involves the ability to apply given criteria to judgments regarding priorities, work

completed, logical fallacies in arguments, and to compare major theories and generalizations.

> Examples: List China's five most serious environmental problems in order of importance explaining why you think as you do; decide whether or not China should supply surplus grain free of charge to underdeveloped parts of the country. What repercussions might this act incur and why?

Although the levels of the cognitive domain were conceptualized as a hierarchy, there exists much overlap between the categories. This should be expected since each successive level contains the knowledge and skill backgrounds of the previous levels. Synthesis, for example, may require knowledge of a particular set of facts and various attempts to translate, interpret, apply or analyze these fact. A complete grasp of Bloom's Taxonomy of educational objectives would require considerable time and study. However, an understanding of the major levels as described here provides sufficient criteria to determine the level of cognitive ability required for students to perform successfully on the geography examinations analyzed in this study.

VITAE

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Publications:

"Some experimental notes on using a film to teach a geography lesson." Educational information. Putuo District, Shanghai, August, 1985. (in Chinese).

"Monsoonal influences in China." Active learning: Theory into practice--middle school geography active learning research. East China Normal University Printing House, Shanghai, November 9, 1985 (with A. Marton, in Chinese)

"Two autonomous regions and a province in North China: Selections from excellent teaching plans and classroom transcripts." Geography for junior middle school. Sun Dawen (Ed.), Henan Educational Press, January 1, 1986 (in Chinese).

"Dealing with teaching materials correctly to improve teaching methods." Educational information. Putuo District, Shanghai, May, 21, 1986 (in Chinese).

"Review of transportation and trade in China." Active learning: Theory into practice--middle school geography active learning research. East China Normal University Printing House, Shanghai, May, 21, 1986 (with A. Marton, in Chinese).

"Using Active learning methodologies in middle school geography classes." Geography Teaching. Shanghai, December, 1986 (in Chinese).

Conference Presentations

"Action Research in the Geography Classroom." A paper given at the Annual Putuo District Educational Research Meeting. Shanghai, June 21, 1986. (with A. Marton)

"The Use of Materials to Teach Difficult and Important Topics in Geography: Using Various Methodological Approaches." A paper given at the Biennial Shanghai Geography Teaching Research Meeting. October 23, 1986. (with W. C. Chen et al.)

"The Development and Implementation of a Map to Teach About Monsoonal Influences in China." A paper given at the Biennial Shanghai Geography Teaching Research Meeting. October 23, 1986 . (with A. Marton)

Unpublished Work:

"Analysis of the Facies of the Huang Qi No. 2 Area Core Samples." Written as an East China Normal University graduating thesis.

"Using Class Projects and other Methods to Enhance Student Interest in Geography." An article prepared in response to a request from the Putuo District Education College Research Committee. May 1985.

"Reforms in Middle School Geography Teaching--Introducing Active Learning in China." An Article prepared following several months of classroom trials experimenting with the use of active learning. March 1986.

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