

Function of Geography Education Facing the Changing World

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In a period of considerable length, geography only was the records and static description of geography facts. Correspondently, Geography Education was guided to focus upon the acquisition and remembrance of geography facts. Nowadays, as the world is getting smaller and smaller, citizens demands more and more general knowledge of geography. To acquire knowledge of geography will be lasting all one's life, and can not be completed only in the classroom. On the other hand, when man-land relationship is tending to more and more complicated. Knowledge of geography required is getting deepening. Using modern technique to collect and process information, introducing principles such as systems theory and its methodology, Geography has become the unique science which intersects natural science and human science, deals with the man-land relationship and gradually become a discipline directly related to the economic construction. Thereby the aims and tasks of Geography Education in Chinese schools and universities are in changing with the social requirement.

I. The Relationship between Geography and Geography Education

In a period of considerable length, Geography only was the records and static description of geography facts, Correspondently, Geography Education was guided to focus upon the acquisition and remembrance of geography facts too. Nowadays, using modern technique to collect and process information, introducing principles such as systems theory as its methodology, Geography has become the unique science which intersects natural science and human science, deals with the man-land relationship and gradually become a discipline directly related to the economic construction. There by

not only the contents of Geography education has been renewed and its level has been raised, but also the aims and tasks of Geography Education is changing constantly.

The development of Geography promotes the development of Geography Education. The popularization and raising of standards of Geography Education become the basis of the development of geography. In his famous book *《All Possible World: A History of Geography Ideas》*, Preston James take 1874, the year when Geography Education was established in German university, as the beginning of the development of modern geography. The close relationship between Geography and Geography Education is clarified clearly by his statement.

II. Geography Education and Social Requirement

But Geography Education could not be equaled to Geography. The tasks and contents of Geography Education is still decided by the social requirement that time.

In the past 40 years, the "social requirement" in China is subordinate to politics. Both the task and contents of geography education are changing with the political demand. In 1950's, the political task of geography education is to criticize the "environmental determinism". It induced to the complete split of physical geography and human geography in geography education and the final outcome is the elimination of human geography from geography education. During the decade 1966-1975, Geography Education completely disappeared from the school curriculum. Traditional geography courses return to school in 1976. Since 1983, the government adopts the open policy, put forward that: "Education should face up to the demands of the modernization, the world and the future", only after then, geography education in China just acquired its new atmosphere.

Comparing the geography textbooks and curricula of different countries or of the same country in different periods, the difference between them always show the influence of the varying social demands on geography education. The former geography curriculum of Hong Kong lacks a systematic supply of information in the understanding of China to the students. The situation is now in changing, after the emergence of "the 1997 question."

So, the tasks and contents of geography education is the function

of the development of geography science and the varying demand of the society.

III. The Biggest Crisis Next Century

The world is changing rapidly in recent decades. Getting faster and faster of the science-technology, socio-economic development become the prominent feature of the changing world. The contradiction between the superpowers is gradually relieving, the threat of World War III is disappearing. Following industrialization, urbanization, rapid growth of population, ecological crisis will become the biggest crisis which men will be facing in next century. Many worldwide environmental problems, such as greenhouse effect caused by CO₂ will make an increase of temperature of the globe, reaction between fluorochloro-methane and O₃ in the stratosphere will cause the destruction of the ozone layer etc., have been concerned over by scientists, and regional problems of environment, resources are particularly serious and threatening the development of the mankind.

Following figures show the serious situation in China:

- 1) population,
540 million in 1949,
1008 million in 1987,
1143 million in 1990,
over 1500 million in 2020,
(16 million increased in 1989)
- 2) Area of cultivated land,
3.5 million hectares decreased since 1978,
0.35 million hectares decreased every year 1978-1987,
0.66 million hectares decreased every year 1994-1887.
- 3) Area of water soil erosion,
1.16 million km², in 1949,
1.50 million km², present,
1.70 million km², in 2000
(about 1/6 of the total area of the country).
- 4) Grassland degeneration,
area of grassland will 20% decreased till 2000.
- 5) Desertification,
1760 thousand km² in 1983,
2513 thousand km² in 2000.

- 6) pollution, waste water discharged,
34900 million ton 1987,
41290 million ton 2000.

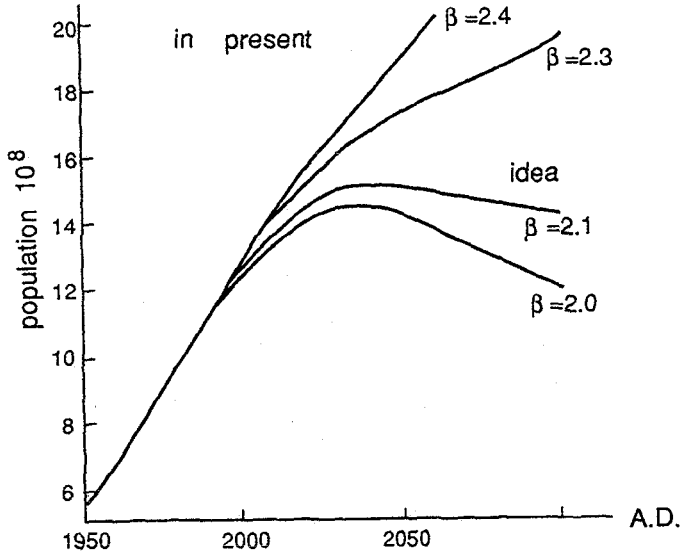


FIGURE 1
TREND OF POPULATION GROWTH (1950-2100)

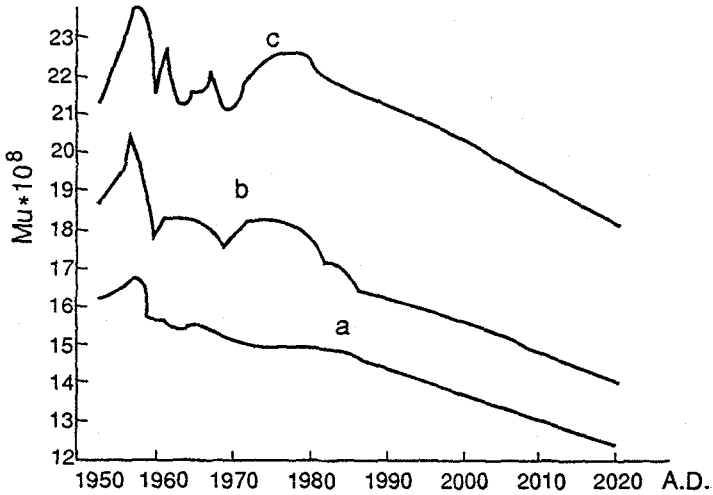


FIGURE 2
CHANGING OF THE AREA OF CULTIVATED LAND (A) CHANGING OF THE SEEDED AREA OF CEREALS (B) CHANGING OF THE TOTAL SEEDED AREA (C) (1950-2020)

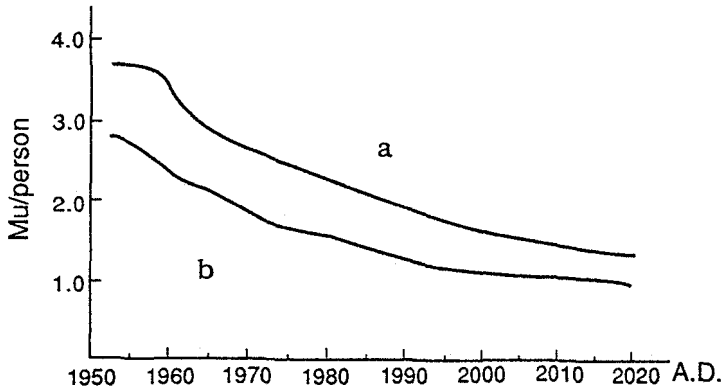


FIGURE 3
CHANGING OF THE TOTAL SEEDED AREA PER CAPITA (a)
CHANGING OF THE AREA OF CULTIVATED LAND PER CAPITA (b)

TABLE 1

CONTRIBUTION OF THE INCREASE OF THE YIELD PER UNIT AND THE INCREASE OF THE AREA OF CULTIVATED LAND IN THE TOTAL INCREASE OF THE OUTPUT OF THE CROPS

Period	1400-1770	1770-1850	1914-1957	1957-1985
Increase of the yield per unit	42%	47%	24-25%	119%
Increase of the cultivated land	58%	53%	76-55%	-19%
Total	100%	100%	100%	100%

D. H. Perkins studied the development of Chinese agriculture 1368-1968, he discovered that from 1400 till 1957, the total increase of crops output were depending both on the increase of the yield per unit and the increase of the cultivated land, the contribution were about fifty-fifty. But after the mid-20 century, the area of cultivated land is decreasing. Depending on the increase of the yield per unit only, it will be very difficult to meet the demand of food for the heavy population (Table 1).

The man-land relationship in China has reached a very intense situation. The capacities of land, resources and environment for carrying population have reached their limits. These difficult conditions are the direct outcome of the wrong policies. Especially "the Big Leap Forward" in 1958 and "the Culture Revolution" from 1966 to 1976 destroyed the Chinese ecological environment seriously. But

in the final analysis, short of environment consciousness both the leaders and the masses is the radical cause.

IV. School Geography Education

In order to avoid the miserable situation which will emerge not long after, measures must be adopted. One of the most important is education, population education, resources education and environment education for the whole nation, particularly for the students. Students today will be citizens after 2000, and it is important to note that leaders of tomorrow's society will come from them. Sufficient knowledge about man-environment relationship has to be taught to them, in order to help them sufficiently prepared to master the big problem and tasks that they will be confronted with.

Geography education has to undertake these important tasks.

In the early stage of school education, there was no subject called geography in the curriculum. It integrated within the subjects "nature" and "society", which comprise the basic knowledge of geography, biology, history and social studies etc., geography constitutes only a very small part of the subject and professional geography teacher was not wanted. Afterwards, geography become an independent course in the curriculum, but for a long time, the text books of geography was full of static description of geography facts, names of mountains, rivers and countries, so that almost anyone could teach geography, and no one take the teaching of geography seriously.

In order to realize the strategic principle: "Education should face up to the demands of the modernization, the world and future", discussion on the reforms of secondary education was held recently. One of the curriculum suggested for the upper secondary school seems as if it is going back to the early stage. The subject Geography, together with several other courses, disappeared from the curriculum, instead, there are subjects "Foundation of Social Science" and "Foundation of Natural Science" (Table 2).

But in reality the situation is quite different. The contents of the subject "Foundation of Social Science" comprises: History, Geography, Social Studies; and the contents of the subject: "Foundation of Natural Science" comprises: Physics, Chemistry, Biology, Ecology, Environment and Resources. Geography Education constitutes a considerable part in both of them: the necessary traditional geogra-

TABLE 2
SCHOOLS CURRICULUM FOR UPPER SECONDARY

Subject	Current		Subject	Suggested				
	1	2 3		1	2 3	Total Teaching Hours	Percentage	Credits
Political Studies	2	2 2	Citizenship	1	1 2	120	4.5%	8
Chinese	5	4 4	Chinese	4	4 4	376	13.3%	24
Mathematics	5	5 5	Math.	4	4 4	376	13.5%	24
Foreign Language	5	5 4	Foreign Language	3	3 3	282	10.0%	18
Physics	4	3 4	Foundation of Natural Science	3	3 3	282	10.0%	18
Chemistry	3	3 3						
History	3	× ×	Foundation of Social Science	2	2 2	188	6.7%	12
Geography	×	2 ×	Vocational Education	2	2 2	188	6.7%	12
Biology	×	× 2						
Physical Education	2	2 2	Physical Education	2	2 2	188	6.7%	12
Hours of Required Courses per Week	29	26 26	H. of R. Courses per Week	21	21 22	2000	71%	128
Electives	×	4 4	Electives	9	9 9	820	28%	52
Total	29	30 30	Total	30	30 30	2820	100%	180

phy education in Foundation of Social Science and environmental education in Foundation of Natural Science.

No matter how the name of the subjects changed, the students should be taught to know the mutual dependency of the society and the nature, the man and the environment, to know the results of environmental pollution, overuse of the soil and over exploitation of limited natural resources. Geography which integrates natural, cultural and social science perspectives is the only school subject

competent for this task, only geography could become and has become the school subject for environmental education.

V. Geographer Training

Training Geographers is the task of the geography department of universities and colleges. It's quite different to the general geography education. In China, there are about 40 comprehensive universities, 14 of them have the department of geography; about 70 normal universities, 33 of them have the department of geography, and 184 normal colleges, 15 of them have the department of geography.

In general, the geography departments in comprehensive universities are laying stress on training geography specialists or researchers, and geography departments in normal universities pay attention to training geography teachers. But the divide is not very clear. Many of the students graduated from the national normal universities, such as Beijing Normal University, which are directly under the leading of State Education Commission, will be working in the research institutes or different departments of the central or local governments, and most of the students from local comprehensive universities under the leading of the provinces will be geography teachers in schools.

About 80% of the geographers in China are geography teachers in schools or colleges and universities, about 20% are working in research institutes and governments. Geography education offers most of the occupations to geographers. But most of the geography teachers in universities and colleges are engaging in research works part time or even full time.

The biggest organization of geography research in China is the Institute of Geography Academic Sinica in Beijing. In the ten-years research plan from 1987 to 1997, the Institute stipulated that 70% of the research projects should be in the field of application, 10% in the field of fundamental research.

The projects include:

- 1) Research on the utilization and reformation of the natural resources, natural conditions, and the territorial management.
- 2) Assessment, monitoring, forecast and harness of the environment.
- 3) Research on the allocation of production and regional development.
- 4) Research on the objective patterns of the matter migration and

energy transformation on the earth surface, climatic change, environmental evolution and man-land relationship.

5) Thematic and complex mapping, GIS and its application.

The plan above reflects the rapid development of the applied geography in recent years. Geography has become a discipline directly related to the economic construction and remoulding of the world. The plan also reflects the social demand for geography education in universities and colleges—to train qualified geographers for their country.

VI. Chance and Challenge

In order to fulfill the assignments in general education and in training specialists, geography education is facing great chance and challenge. The geography departments in China, both in comprehensive and normal universities and colleges, are now facing the tasks to adjust their specialities and to reform their curricula.

In the changing world, geography education is very important for the well-being of the individual and the society. Alfred Hettner hold that: If geography education be neglected, the interests of the whole nation and whole country will be injured. Hettner was before World War II. Now we have to say: If geography education be neglected, the interests of the mankind, the whole globe will be injured.