

Information Literacy, Education Reform and the Economy— China as a Case Study

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Abstract

The Information Age has had an enormous impact on people in their personal and business lives. Information literacy offers a new means of navigating this transformed landscape. This paper explores the status of information literacy research, policy, and training in China, as well as information infrastructure progress. It compares developing and industrial nations in terms of information infrastructure and information literacy, and highlights where further progress can be made. Background is also provided on China's program of comprehensive education reform, beginning with its campaign against illiteracy in the 1950's.

INTRODUCTION

In the past 50 years, the Chinese government has taken various measures to train its people to read, write, and utilize information:

- A movement to wipe out illiteracy (1950's)
- Literature Retrieval courses offered to all College Students (1980's)
- Courses in computer and Internet applications (1990's)

All these measures are very important for training Information Literacy.

The author will conduct comparisons between developing and industrial countries in the aspects of National Information Infrastructures (NII), Internet, development and utilization of information resources, information policy and rules, information professionals—and analyze the impact and significance of information literacy on individuals, society, the economy, and education.

Finally, the author will discuss the measures for training the people's information literacy skills through:

- building awareness of information resources,
- encouraging lifelong learning and putting into action the revolution of curriculum,
- accelerating informatization in the fields of science, technology, and education (especially in rural areas),
- making good use of information education in the higher schools,
- bringing about national literacy education,
- carrying out the national standard of information literacy,
- training information professionals, and
- building a uniform culture of information in China.

A core concern of people is how to mine and utilize the exact information they need in the face of the information explosion. A nation's economic independence and quality of life is becoming more dependent on the information literacy and lifelong learning skills of its citizens. This level of competency has to start with a basic change in the way young people learn. In addition, to respond effectively to an ever-changing information environment, people need more than just a personal knowledge base. They also need techniques to connect that knowledge with collective knowledge and to make practical use of it. In other words, the information landscape upon which we used to stand has been transformed, and we are being forced to establish a new foundation called information literacy. Information literacy is very important to student achievement, quality of life, business, and citizenship in a democracy.

1. INFOLIT: BASIC QUALITY & REQUIREMENTS IN THE INTERNET AGE

1.1. Definition of Information Literacy

There are three levels of literacy. Basic literacy is the ability to read and write. To be fluent in a native language and in English is the elementary requirement in China. The second level is computer literacy. The third level is information literacy: the ability to know when there is a need for information, and to be able to locate, evaluate, and effectively use that information to fulfill that need. This ability has emerged as particularly important as a result of the Information Age.

The American Library Association's Presidential Committee on Information Literacy Final Report (1989) defined an information literate people as those, "who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand."¹

Since the ALA's report, variations on the definition have emerged. The US National Commission on Libraries and Information Science (NCLIS) Chairperson Martha Gould defines information literacy as the ability to locate, retrieve, evaluate, organize, understand, and utilize information. In her June letter of 2001 to UNESCO Director-General Koichiro Matsuura suggesting the idea of an international information literacy meeting, she stressed, "It is not enough just to learn how to use computers and connect with telecommunications networks. Those skills are often called computer literacy and media literacy. While learning about computer literacy and media literacy is a necessary pre-condition to information literacy, they are insufficient for the Internet Age. In short, a million hits from a World Wide Web search is not going to get you very far," she emphasized. "Every country in the world is quickly coming to the conclusion that the key to dealing with the so-called Digital Divide is to address the challenge of ensuring that every individual learns basic information literacy skills."²

Professor Sang Xinmin, from Education Research Center for the Future in the Education at University of the Southern China, expresses information literacy in these six terms ³:

- training to acquire information effectively,
- evaluating information proficiently and critically,
- absorbing, storing and distilling analyzing information effectively,
- expressing information in multimedia formats and utilizing information creatively;
- translating the competence of reining information into the ability to study and communicate in freedom;
- studying, training and raising the morality, feeling, law-consciousness and social-responsibility of citizens in the Information Age.

The information literate person, therefore, is empowered for effective decision-making,

freedom of choice, and full participation in a democratic society. It is not enough just to learn how to use computers and networks.

1.2. Computer Literacy, Media Literacy, and Information Literacy

Basic Literacy: In a non-English speaking nation, the native language helps people acquire the local information and materials while English enables them to grasp the information in other countries—as well as Internet information, and information to use computer hardware and software. English is the gateway to acquiring additional information people need, as well as mastering computer literacy. Computer literacy (also known as Internet literacy and digital literacy), is the competence to utilize intelligently and efficiently computers and software to acquire knowledge and experience in the field of study. Media literacy is the ability to decode, analyze, evaluate and communicate in a variety of media formats. Information literacy is the car that allows the driver to negotiate the Information Superhighway.

While learning about computer literacy and media literacy are necessary preconditions of information literacy, they are insufficient for the Internet Age. Information literacy has always been important to success and quality of life. The only thing that has changed is the amount and variety of information that is now available. Although there has always been a need to find, evaluate, and effectively use information, the abilities needed to do so have just grown larger, more complex, and more important as the volume of available information has mushroomed beyond anyone's wildest imagination.

2. LITERACY MEASURES & PROCESSES AT DIFFERENT TIMES IN CHINA

2.1. Basic Literacy Campaign (1950's)

China's movement to wipe out illiteracy began in the 1950's, which lagged slightly behind the efforts of Japan and the United States. Since new China was founded, the Chinese government has been popularizing nine-year compulsory education. The goal has been that by the year 2000, all children above six years old would be able to receive at least nine years of school education. Especially after the Law of Compulsory Education was implemented in 1986, the government and citizens have worked together to realize this grand goal.

In April 2001, the Conference on the Law of Compulsory Education, which had been in place for 15 years, was held in the Great Hall of the People by the Education, Science and Culture Committee of National People's Congress, the Ministry Education and the Legislative Affairs Office of the State Council. The committee's official, Li Lanqing, pronounced that compulsory education is a long-term plan devoted to the development of the country and the prosperity of the people. Lanqing said China should assist on the three-representative panel proposed by Chairman Jiang Zemin, and quicken the reformation and development of compulsory education in order to raise the quality of life for all people and hasten modernization.

Lanqing indicated⁴ that our country had almost realized its objective: popularizing

nine-year compulsory education and wiping out illiteracy among young and middle-aged people. By the end of 2000, 85 percent of China's population had received the nine-year compulsory education, consisting of enrolments in primary school (99.1%), junior secondary school (94.4%), and senior secondary school (50.0%). The illiteracy rate among young and middle-aged people dropped by 5 percent. The enrollment rate of disabled children had increased. The educational level has risen from less than five years per capita to more than eight years since the 1980's. All the above figures show that our elementary education had made great progress.

2.2. Literature retrieval Courses (1980's)

China implemented a plan in the 1980's to train all students at the higher levels in literature retrieval. Before 1984, literature retrieval courses given in colleges and universities in China were informal and not standardized. Two official documents issued in 1984 and 1985 respectively by the Ministry of Education formalized the curriculum. One offered a curriculum of literature retrieval and utilization for Chinese institutions of higher education. Another offered several opinions about improving and developing the course (its contents and requirements).⁵ All the institutions of higher education were involved; and a group of teachers from different disciplines volunteered a significant portion of their careers to this end. Many librarians took the course in their spare time. Within two to three years, 50 percent of the Chinese institutions of higher education offered the curriculum in different ways.⁶ Some thought that literature retrieval, foreign language and computer literacy should be the three compulsory and basic courses in institutions of higher education. Later the full-time teachers took the course of literature retrieval.

The higher education course was then extended to primary and secondary schools, as well as to the public. Over 86 percent of academies and over 96 percent of medical academies in China now comply with the basic requirements of the curriculum conveyed by the Ministry of Education in 1992. The course is either an elective or required at present.⁷ After nearly 20 years of practice and research, the course has been developed into a valuable, theoretical, in-depth course. This achievement is distinct; but the problems are also obvious such as the imbalance between different academies.

2.3. Course of Applications of Computer and Internet (1990's)

“Education must face modernization, meet the needs of the world, face the future,”(Deng Xiaoping, 1983)⁸ Mr. Deng Xiaoping indicated. “The popularization of computers must begin from infancy.”(Deng Xiaoping, 1985)⁹ In 1996, the China Ministry of Education issued the five-year development program on computer education in primary and secondary schools (1996-2000).¹⁰ It put forward the detailed goals, tasks and requirements of computer education, research, equipment and management in primary schools and secondary schools in China. There were requirements for at least 25 computers in every senior secondary school, 20 in every junior secondary school, and 15 in every primary school. The following table lists the percentage of schools that have met

the requirements:

Table 1: Chinese Schools Meeting Goals for Computer Hardware Placement

Region	Senior secondary schools (%)	Junior secondary schools (%)	Primary schools (%)
City	80	60	15
County	60	30	5
Country	30	5	A few, no detailed requirements

In 1998, the Ministry of Education's plan for the 21st century advocated and encouraged the wide-use of computers, research and design of education software, and construction and application of campus networks. Goals included¹¹:

- profound changes in the education system brought about by information technology,
- the ability of most primary and secondary schools to watch educational TV programs by 2000,
- basic computer training and continuing education for headmasters and full-time teachers of primary and secondary schools—as well as students in common schools,
- the design of education software of high quality, and
- the construction of a national resource warehouse and education software development centers.

In June of 1999, to deepen education reform and promote complete literacy education, the State Council, pointed out specific goals and requirements:¹²

- teachers should master the necessary modern education technology and means,
- the computer application course should be popularized in senior secondary schools and in part of primary and junior secondary schools,
- education and scientific research computer networks should first connect all institutions of higher education and the skeleton vocational schools, and then gradually with primary and junior secondary schools,
- economical terminal platform and campus networks (or local networks) should be built, and
- steps should be taken to design excellent education software.

In July 1997, the criterion for campus network construction in secondary schools was proposed.¹³ In Nov 1999, all the senior secondary schools and urban junior secondary schools were required to offer the compulsory course of information technology starting in 2001 (The junior secondary schools in developed regions from 2003, the other junior schools from 2005, the primary schools in cities and developed regions from 2005, the other primary schools from 2010). In addition, it stipulated that 68-136 hours should be

spent on IT course in primary and junior secondary schools and at least 80% of the hours should be used for practice.¹⁴

Incomplete statistics suggest that by the end of 1999, almost 60 thousand primary, junior and senior secondary schools (an average of one third of each kind of school) had offered the information technology course in our country. The number of computers had been doubled every two years, reaching one million. There had been nearly 70 thousand full-time and part-time computer teachers, and over 30 million students every year in primary and secondary schools to accept IT education. Nearly three thousand schools constructed campus network.¹⁵

2.4. Future Plans

In October 2000, the Department of Basic Education in the Ministry of Education put forward the main tasks and goals of information technology education in primary and secondary schools in the future¹⁶. The first teaching target is to train students to be information literate, so that they will be able to collect and analyze information—as well as communicate and express it. The whole process of Information Age education from now until 2010 consists of three parts. The first is to popularize the information technology education in primary and secondary schools focusing on computer applications. The second is Internet use instruction. The third is to develop distance education especially in rural Chinese schools, to lower travel costs, share information resources, and train teachers at a distance.

3. COMPARING DEVELOPING AND INDUSTRIAL COUNTRIES

3.1. National Information Infrastructures (NII) in China

The US began construction of its Information Superhighway in 1993, with the hopes of raising productivity and GNP. Following this development, Japan and Korea have collaborated to construct the Asian Information Highway; and developing countries such as the Four Dragons of Asia (Taiwan, South Korea, Hong Kong, Singapore). Technology has become the dominant industry in the most developed nations, ahead of even manufacturing.

There are ten information transmission networks in China (National Satellite Communication Network, CHINASP, Special-purpose Communication Network, Public Telephone Network, Telex Network, International Online Information Retrieval Network (CEInet), CERNET, CHINANET, and ChinaInfo System). ChinaInfo System offers information service in Chinese, and aims at developing the national information industry, pushing forward information sharing, improving the information consciousness of the public and giving free retrieval service for the public.

China is able to keep pace with American software makers such as Microsoft, but cannot keep pace in the area of precision manufacture, which greatly affects the hardware and

software environment in China. Two reports, G&D Expenditure and Its Share in GDP¹⁷, International Comparison of G&D activities¹⁸, make this claim based on lower national investment and human resources in China.

3.2. Internet

Although the Internet came to China later than other countries, it is rapidly developing. China Internet Network Development Statistical Report, is a timely and authorized investigation made twice a year, respectively in July and in December, by China Internet Network Information Center□CNNIC□. This is some data up to December 31, 2001¹⁹:

Table 2: China's Report on The Development of its Internet Penetration

Items(unit)	2002. 1	More than that in 2001.1	Percentage increase (%)	Remarks
"Netizens" (millions)	33.7	11.2	49.8	The largest growth rate, 40 percent of the female, more balanced distribution in all of the provinces, steady increase both under and over 35 years old.
Computers connected with Internet (million)	1254	362	40.6	
Total Capacity of Internet Circuitry (M)	7597.5	4798.5	271	Very important to the application and prevalence of Internet

This table shows that the availability and use of the Internet in China is increasing across region, age, and gender lines. In addition, the wondrous increase in bandwidth indicates that the Chinese government attaches importance to developing a strong information infrastructure.

There are areas that still need improvement in China. Network security is very poor—63 percent of users were broken into in 2001. Anti-virus software is the primary safety measure for 78 percent of users. A good portion of Internet construction capital (15-20%) was devoted to security in the US, while less than one percent was given to the same purpose in China. Data backup is also stronger in the US, and localized in every state. An English institute²⁰ classified the network development in all countries into four levels. China rated second in network penetrations and fourth in security. The development and utilization level per capita of information resources in China is two or three grades lower than that in industrial countries. Chinese databases represent only one percent of the world's total. The disparity has been enlarged in recent years due to the West's investment in the infrastructure to support the Information Superhighway.

3.3. Development and Utilization of Information Resources: China in Context of Developing and Industrialized Nations

Information literacy, as well as available information resources, will be a dividing line between haves and have-nots in the society of the future. At present industrial countries

account for only 20% of the world's population but own 80% of information. The inverse is true of developing countries. Therefore, the lack of information resources and knowledge is the largest obstacle to developing countries, which may lead to a vicious circle. This can lead to a situation in which the information-rich will get richer, and the information-poor will get poorer. It is obvious that the development and utilization of information resources is the core of national economic health and competitiveness.

The Internet provides developing countries with global information resources in digital form. The development and utilization information resources are of direct and strategic importance to science and technology—and their impact on the economy. They also have impact on government decision-making and the ability to use other resources. With digital information and communication networks, the gap between industrial countries and developing countries can be narrowed. The goal to build NII is predicated on information literacy, which allows for proper use of information and innovative practices.

China is different from some industrial countries in its strategy of information resources development. For example, the US government invested in NII, created helpful policies, and partnered with private business to bring the Internet to the public. The construction of the NII was a competitive process among private entities. While in China, certain industries are managed and controlled by government, such as the telecommunications and publishing industries. This has hindered the development of NII and information resources. The Chinese telecommunications industry did not really step into the market until the end of 2001—although it was a big leap forward.

4. SETTING NATIONAL INFORMATION POLICY AND RULES IN CHINA

Information security breaches, information crimes—partly due to the economic success of the medium itself—have seriously affected the exploitation of information resources. The solution is good national policy, laws, and technological safeguards. Information policy and rules in the US are wide in scope and refer to the information industry, intellectual freedom, intellectual property rights, individual privacy rights, international information policy, and legislation. The law environment in our countries is not fully developed especially in the field of information property rights and individual privacy rights. There are several distinct problems as the followings:

- Chinese current information policy and rules are limited in the field of science and technology, which are narrow and easy to form a value of Small Information Policy and Rules and hard to lead and harmonize the information industry and information activities on the whole,
- The information law system is imperfect, the political statements of the government departments often lack of the law gist, lots of policy and rules conflict with each other and lack of continuity and stability;
- Various regions and departments have carried out a series of local or industrial information policy and rules, but the whole harmony in the macroscale is deficient and the benefit conflicts among the regions and departments are

- outstanding;
- The current policy and rules not only have cross and overlap but also can't cover all information activities, they usually can't satisfy the urgent need especially in the Knowledge Economy Age;
 - The national information policy and rules have no good link with the international conventions, which will have some trouble after China entered into WTO and may obstruct the development of Chinese information industry.

At present, the Chinese government took some measures to change this condition. For instance, the Law of Information Resources is in constitution by National Information Center of China; the National Information Policy and Rules, a grand project of the Ministry of Education, has been delegated to School of Information Management of Wuhan University. Our research will be achieved in the coming two years.

5. INTELLECTUALS AND INFORMATION PROFESSIONALS

The development of information infrastructure and literacy requires many educated individuals. The Clinton administration saw the education and training of computer literate citizens as a basic ingredient for a strong American economy. In the five years from 1993, it invested 9.6 billion dollars to further the national service plan, reinforce primary and secondary education, popularize IT education, cultivate IT professionals, brokers, and information managers²¹. The US federal government also passed a loosened immigration law in 1991 to attract foreign IT professionals. China and India have been the export countries for technological intellects. Developing countries often cannot maintain their native intellectuals due to a lack of economic, professional, and educational opportunities. In recent years, the Chinese government has responded by taking steps to intellectually stimulate its citizens and to attract foreign citizens of Chinese descent to come back to better the nation.

6. THE IMPACT AND SIGNIFICANCE OF INFORMATION LITERACY IN CHINA

Information literacy has the power to impact people's lives, education, the economy, and even the management of companies. Citizens, companies, and the government in China realize the significance of information literacy.

6.1. Information Literacy and Individuals at Chinese Colleges

Information literacy becomes a fundamental literacy in the Information Age. Information literacy is also a hallmark of the educated person in the Knowledge Economy. For this reason, China has made it a part of the college curriculum. In 2001, there were over 13 million college students in China²². This represents great progress. Continuing education reform in China is necessary to better the nation and nurture gifted students.

There are some successful examples of education reform in China. For example, more

than 40 percent of the validation experiments have been replaced by design experiments to improve student's research skills and contribution to the knowledge base at Shanghai JiaoTong University.²³

Tsing Hua University is the first Chinese college to construct digital campus (24,000 computers) modeled after those at the world's top universities. The campus network has been well received by students. At the same college, over 60 courses are taught in English. Sixty percent of these courses are in the biology and management departments.²⁴ English language instruction in IT classes is a helpful means to teach students about information literacy. Using the original English textbooks is helpful to train information literacy. IT education and utilization is also an excellent opportunity to teach information literacy.

6.2. Information Literacy and National Informatization

Information literacy is a measure of national economic development in a country such as China. My colleagues and I think that the impact of the Information Age has several aspects: business, industry, national economy, and social life. The people's information literacy skills will influence the national economy and social life of the country. In another words, in the development of the information society as a whole, informatization is the concrete reflection of information literacy.

The Chinese government has taken measures to develop the national informatization since the 1980's. At the end of 1993, the government founded a special informatization organization presided by the premier of State Council. Chairman Jiang Zemin emphasized that: "The realization of any one of our four modernizations can not be accomplished without informatization."(Jiang Zemin, 1992)²⁵ Informatization is a profound revolution for the creativity of science and technology. Chairman Jiang also put forward that China must focus on improving the people's knowledge and their ability to make use of informatization. Information literacy must be popularized in primary and secondary schools. The skills to acquire and utilize information must be also developed in the workers.

China values the ability to assess its information infrastructure and the information literacy skills of its population. For eight years' working, twenty evaluative tools for informatization were published in 2001.²⁶ Information competence as a synthesis of abilities was published in 1999.²⁷ Quantitative analysis includes four instruments: 1. The ability to use information technology and devices, 2. The ability to develop and use information resources, 3. Literacy of information subjects, and 4. Government support for information.

In the 1990's, a survey of 28 countries of various levels of economic development was

²³ The calculable system of national informatization in China has a development process, the tools changed from thirty to twenty-five, then twenty in July 29,2001, and the instruments changed from five to four. Here, some data came 2001 ago, for the uniform and relativity, so we settle with these data according to twenty tools and four instruments.

conducted.²⁸ China came in eighth from the bottom in the first index, and last place in the other three categories, and twenty-fifth in the synthetical evaluation:

Table 3: Rank of China in Informatization

Rank	Country	Total Scores
1	Japan	32727.41
2	US	27597.32
3	Singapore	26554.49
4	Germany	23812.68
5	Holland	22612.98
6	France	22605.31
7	Australia	21111.04
8	Canada	20577.77
9	England	19241
10	Italy	17383.24
11	New Zealand	16813.16
12	Spain	13676.33
13	Korea	13038.4
14	Russia	6395.69
15	Poland	5113.57
16	Brazil	4491.2
17	South Africa	4195.34
18	Mexico	3931.97
19	Turkey	3920.7
20	Thailand	3549.3
21	Rumania	3185.04
22	Philippines	2797.31
23	Egypt	2141.91
24	Indonesia	1866.87
25	China	1375.03
26	Sri Lanka	1135.13
27	India	883.46
28	Pakistan	680.86

Industrial countries lead the way in information competence. The first ten places belong to industrial countries. China exceeds countries only of the middle and low level of development: Sri Lanka, India and Pakistan.

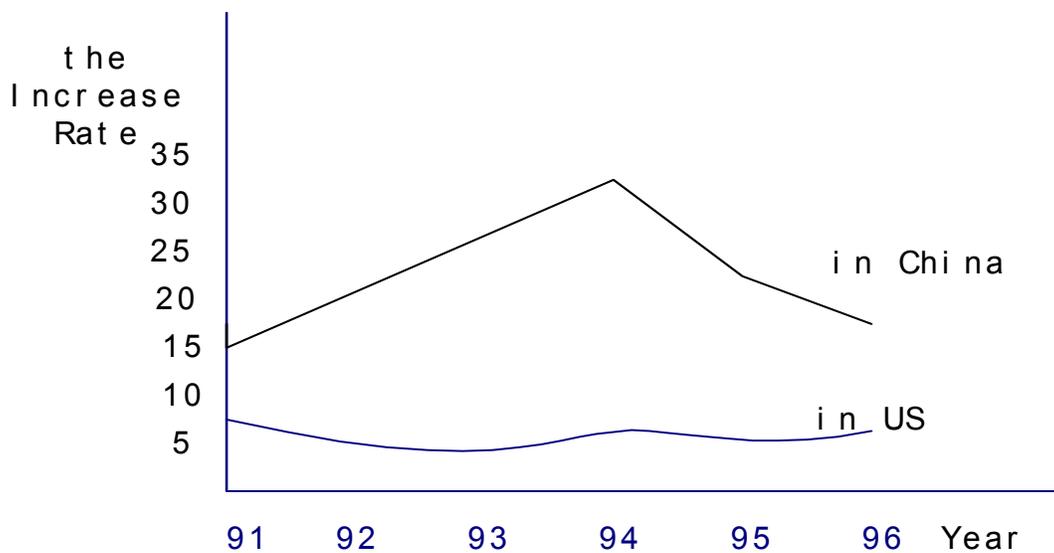
However, China is improving at a higher rate (15%) than the US, although the growth is not as stable²⁹:

Table 4: Rate of Informatization: China and the US

Year	The Increase Rate of informatization in China (%)	The Increase Rate of informatization in US (%)
1991	15.02	7.45
1992	21.27	5.09
1993	27.37	4.62
1994	32.56	6.14
1995	22	4.48
1996	16.42	5.18

The Graph of the two increase rates of informatization in China and US is as follows:

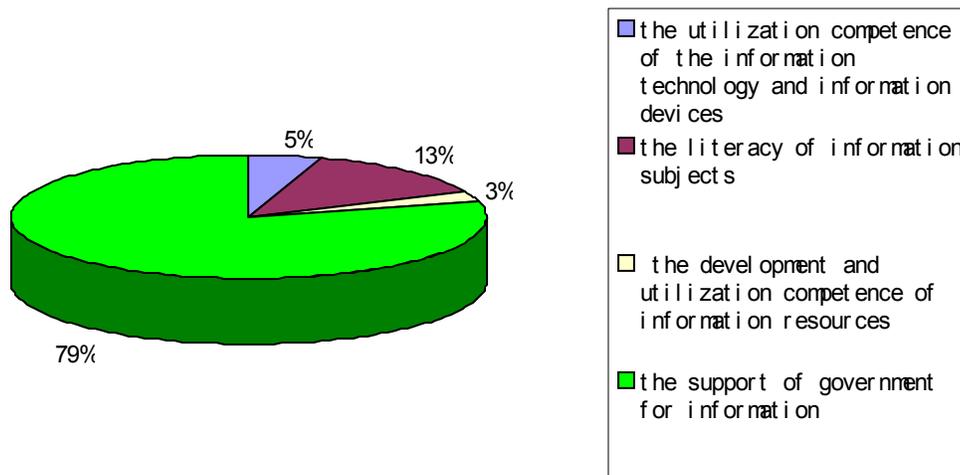
Table 5
Rate of Informatization: China and US



It is obvious that China has made great progress in informatization and has great potential for further development. The percentage of the four indexes in 1996 is inconsistent. Two indexes—the ability to develop and use information resources, the ability to use information technology and devices—together is less than 10%. Statistics demonstrate that the development of IT and the utilization of information resources should be the key for China to keep up with the industrial countries. The following is a figure in 1996^{□30}:

Table 6: Utilization of information in 1996

□ Some quoted data are settled according to the needs of the analysis.



6.3. Information Literacy and Today's Businesses, Managers, and Employees

The workplace of the present and future demands a new kind of worker that is information literate—one who can find, evaluate and apply the right information when confronted with a deluge of information from the global marketplace.

Information literacy literature has implication for management as well. Managers must concentrate on information technology infrastructure, and emphasize the efficient flow of information. When managers and workers are information literate, funds are not squandered on expensive information infrastructure, absenteeism, and wasted time. Information literacy fosters a workplace that benefits from collaboration and creativity. Workers should be judged not only by their resumes and intellectual gifts but also by their information literacy skills.

A Japanese expert concluded that information literacy could be the foundation of Total Quality Management (TQM) in the Information Age³¹. Information literacy is an inspiration for an appropriate management strategy for the times.

In brief, both computer and information literacy are critical success factors in achieving political, economic, and socio-cultural development goals in the Internet Age, especially in less developed countries.

7. HOW TO TRAIN THE PEOPLE'S INFORMATION LITERACY

The information era has created a new class of information illiterates, some of whom may be highly educated. My colleagues and I have come up with methods of teaching information literacy to combat this situation:

7.1. Improving People's Consciousness of Information and Training Their Information Literacy

Proper information literacy training is based on knowledge of trends in current information technology. This makes development of the necessary information infrastructure in China particularly important. Worldwide awareness and strategizing in the area of information literacy is important in forums such as the 2002 UNESCO conference. Education and library professionals should delineate the skills all students should develop as part of an information literacy curriculum, provide scenarios of information literacy in action, and briefly discuss the respective role principals, teachers, and library media specialists. A wide range of individuals should conduct instruction and assessment of information literacy skills.

7.2. Lifelong Learning and the Revolution of Study

Teaching the value of lifelong learning in the culture. The unique and best way to conquer functional illiterates is to keep studying for life and master the study method in the Information Age. Life learning should be regarded as the best foundational viability competence to every person. For the new generations have the value of lifelong learning, the current curriculum must be reformed to train students the characters, competence, thoughts and action methods, which are vital to them in the future. A foreign education expert³² thinks the education level and professional skills are the first and second passport in making a living. Then, information literacy is the third passport in digital times. Today's study has changed a lot, we can't treat today's study from the old point of view. The wise attitude is to reform one's study creatively. The revolution of study includes the study methods, study time and space, the study content, individual learning and study in working.

7.3. Accelerating Informatization

Accelerating Informatization in the fields of science and technology and education (especially in rural areas). China will benefit from embracing technology infrastructure and education. We should use computers in scientific research and distance education. Eighty percent of Chinese youth live in rural areas, which are the most disadvantaged areas in terms of economic and educational development. The biggest disparity between rural schools and urban schools rests with education resources and children's information literacy. The realization of rural information literacy in China will be one of the signs that national informatization has been achieved.

7.4. The Place of Information Literacy on Campus

By incorporating information literacy as multi-dimensional philosophy of higher education, and incorporating it into the general curricula, higher education plays a more important role in the betterment of society. Such institutions should teach liberal arts and IT skills, and also information literacy which allows students to critically examine and

reflect on information. Campuses can support this endeavor by creating IT networks and focusing campus culture on them.

7.5. Carrying Out the National Standard of Information Literacy in China

In recent years, what information literacy is and how to train it are more and more widely discussed in China—especially with the development of information literacy in all kinds of schools, and with the rapid expansion of modern information technology in education. At present, it is an urgent need to carry out national standards of information literacy satisfied with the Chinese situation. Detailed and specific requirements and standards should be given according to the age of students and where they live. Information literacy is not a temporary goal. It is a lifelong goal for everyone because such skills are crucial to the survival of all of Chinese citizens in the Information Age. Information literacy should be included in any curriculum or evaluation system. In doing so, Chinese comprehensive education reform can be successful.

7.6. Raising Capital for Chinese Infrastructure Development To Aid Information Literacy

Chinese government and institutional policy-makers, as well as foundations, understand why adequate financial support is a critical factor for successful information infrastructure development. However, the government should pay attention to the return on its investment and raise money from various channels. Informatization construction is a national cause. The government and every citizen should take part in the construction, including the investment. The sheer size of the nation has caused a decentralized construction effort that does not always see an equal return on investment. China would benefit from a fund-raising initiative for information infrastructure that would involve government, private individuals, and private enterprise.

7.7. Building the uniform information culture

It is essential that we build new information environment to adapt to the new Information Age. Unlike America, there is still no law such as the Freedom of Information Act or a cultural environment in which everyone can acquire information equally. In China, some information is more accessible to the higher and not the lower rank, in a system that is still very strict. If the digital network doesn't become available for the whole society, its social effect will be very limited. My colleagues and I believe that we should build a uniform global information culture that includes information literacy as a basic tenet. Every one in a society should be able to operate computers and have the skills to find, organize, and evaluate the information they discover.

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Available at:

<<http://www.nclis.gov/libinter/infolitconf&meet/ma-fullpaper.pdf>>

Quoting from or reproduction of this paper is permitted when accompanied by the foregoing citation.

Endnotes

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