A   Probe into Reform and Development of DOE in China

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【Abstract】The progress that China has made in popularization of higher education has laid a good foundation for the development of continuous education. The rapid popularization of the Internet has provided a better environment for the development of IT-based DOE. After nearly 10 years of experimental work, DOE in China has made remarkable achievements, and has been defined the training model of application-oriented talents while exploring in practice. With its unique advantages and accurate positioning, DOE will contribute to learning- communities and learning-groups when the life-long education and learning-society become goals of the development of China's education. DOE will also become China's main form of education in the leaning society.
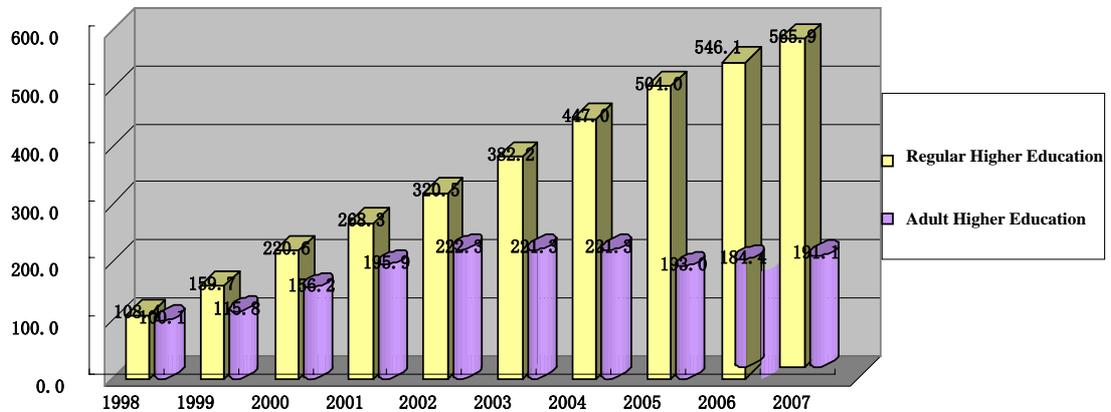
【Key words】DOE   Reform   development

Information technology (IT) has become the primary productive force in China's current stage of the economic construction. The contribution of the rapid development of information industry to the national economy and its leading role of other industries show the key role of China's strategic deployment of "Using information technology to stimulate industrialization" in the process of the all-round construction of well-off society. As an important outcome of the development of IT, the Internet has greatly changed the way of life of human beings. Accompanied by the rise and development of the Internet, DOE has not only improved the learning means of traditional education, but also developed into an important form of continuous education, and it will also play an important role in constructing the systems of learning society and life-long learning.

I. The Base of the Development of DOE

1. Rapid Development of China's Higher Education

China's higher education consists of a regular higher education system and an adult higher education system. Although there exists a big difference between the two in terms of student enrollment and diplomas, adult higher education as an important part of China's higher education, added more opportunities for social members to access post-secondary education and served much more extensively for social and economic development in the last century, Since 1998, China's higher education has made great progress after several years of continuous expansion. In 1998, college enrollment was 1.084 million, while it has grown up to 5.659 million till 2007, five times of the 1998 figure. Meanwhile, there is no age limit for enrollment any longer. Chart 1 shows the trend of college enrollment in regular and adult higher education:

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Picture 1 the Number of Enrollment of Regular Higher Education and Adult Higher Education
Unit:10000

The popularization of general higher education has made the gross enrollment rate of higher education from 9.8% in 1998 increase rapidly to 23% in 2007, and the rapid growth continues. Judging from the demographic change of the 18-year-old in China, the gross enrollment rate of higher education may reach 39% by 2016 if the number of higher education enrollment keeps 5.461 million in 2006 unchanged every year. Chart 2 demonstrates the original judgment of the development trend of regular higher education gross enrollment rate according to China's 18-year-old demographic changes:
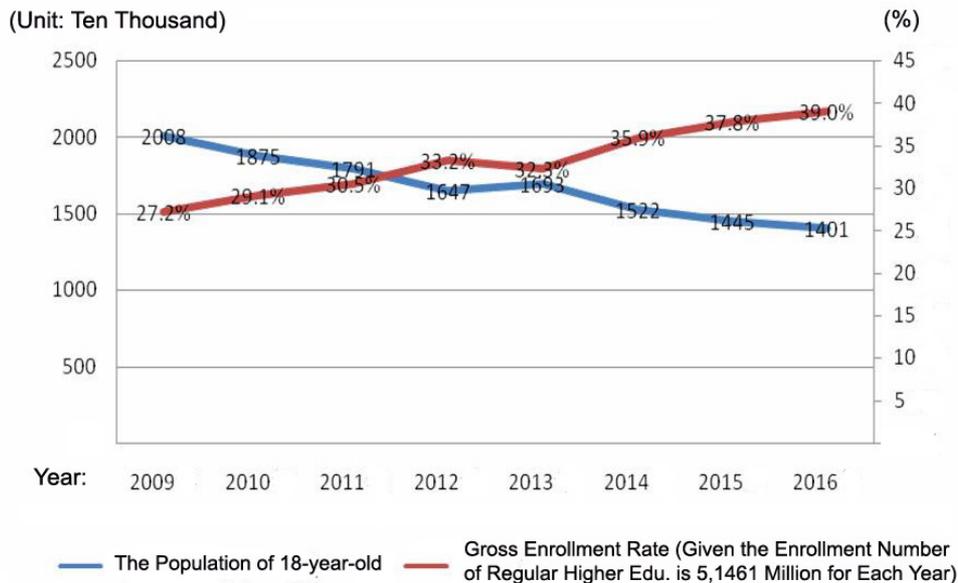

Figure 2   The Gross Enrollment Rate of Regular Higher Education

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The growth of higher education gross enrollment rate in developed regions and cities was significantly higher than the national average. Take the year 2007 for example, the higher education gross enrollment rate of Jiangsu Province was 37%, Zhejiang 38%, Shanghai 65%, Tianjin and Nanjing 55%. In 2006, the higher education gross enrollment rate of the major cities such as Guangzhou, Shanghai, Beijing, Tianjin, and Nanjing was over 50%. Because of China's family planning policy, the age structure of the population has taken significant changes. The population of 18-year-old in 2008 in China is 26.21 million; by 2015 it will decrease to 14.45 million. Given such a circumstance, people's desire and demand for quality higher education is highlighted unprecedentedly. Only take Beijing for example. In 2006, there were 20,000 students who failed to enter their ideal universities decided to study for an additional year in high school to better prepare for college entrance exams, a 25% increase compared with the previous year. High gross enrollment rate of higher education in cities and the stronger awareness of pursuing high-quality college education resources unveiled a new picture for the overall development of China' higher education.

With the rapid development of regular higher education, the supplemental function of adult higher education has been reduced significantly. The number of students in adult higher education increases relatively slowly, and the number of adult education colleges is also rapidly decreasing. In 1998, there were 962 Adult Education Colleges in China, while in 2007 there were only 413, the number curtailed more than 50%. In the same year, the number of regular colleges and universities reached 1908.[1] The entrance examination of adult higher education is gradually losing its significance of student selection. The admission score standard of adult college entrance examination across the country keeps lowering down. Take "Gaoqizhuan" (College Diploma Program Entrance Exams for High School Students) for example, in 2006 the admission standard was less than 120 points (total score 600 points) in more than half of the provinces (municipalities) in China. In the same year, the admission standard of some school was only 100 points (total score 450 points) in the "Zhuanshenben" test (University Bachelor's Degree Program Entrance Exam for College Diploma Holders).[2] As an extreme case in a few areas, the adult higher education entrance exam-sitters were far less than the total number of enrollment targets.. Despite that the scale of adult higher education has the tendency to shrink; the number of prospective college students is still very large in a short period of time. By analyzing the 15-year-old population, the net

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[1] Data sources: The statistical bulletin of the development of National education in2007
[2] Data sources: The summarized admission information of National Adult College Entrance Examination

enrollment rate of senior high school and 18-year-old population, higher education gross enrollment rate, we can see that the number of potential adult higher education students is still considerable as indicated in Table 1. Take the year of 2007 for example, there were 12,092,300 high school graduates. Given that 5,782,200 graduates obtained access to regular higher education, the number of prospective adult higher education students might be 6,310,100.

Table 1 the Analysis Table of the Potential Adult Higher Education students in China

Year	the Population of 15-year-old Unit: million	the Gross Enrollment Rate of Senior High School	High School Graduates Unit:10000	the Population of 18-year-old Unit: million	the Gross Enrollment Rate of Higher Education	the Number of People Accepting Higher Education Unit:10000	the Potential Number of Adult Higher Education Unit:10000
2000	20.43	42.8%	937.86	23.10	12.5%	288.75	649.11
2001	23.19	42.8%	816.44	20.06	13.3%	266.80	549.64
2002	25.28	42.8%	832.71	20.31	15.0%	304.65	528.06
2003	24.58	43.8%	874.40	20.43	17.0%	347.31	527.09
2004	25.14	48.1%	992.53	23.19	19.0%	440.61	551.92
2005	26.21	52.7%	1081.98	25.28	21.0%	530.88	551.10
2006	20.08	59.8%	1076.60	24.58	22.0%	540.76	535.84
2007	18.75	66.0%	1209.23	25.14	23.0%	578.22	631.01

Note: Senior middle school education (including High school, Vocational High School, General Secondary Specialized School, Technical School, Adult High School, Adult Secondary Specialized School)

Data sources: China Education Yearbook 2004, the statistics of education development——all levels of education gross enrollment rate

<http://www.edu.cn/list1_544/20060323/t20060323_157415.shtml>

Data sources: the population of China in 2000 by age and gender, China Population Development and Research Center

<http://www.chinapop.gov.cn/wxzl/rkgk/200806/t20080629_157000.htm>

2. The Rapid Development of China's Internet

The latest report of China's Internet development shows that the number of Chinese netizens has reached 253 million by the end of June in 2008, making the scale of the netizens the biggest in the world. China's netizens has continued to increase rapidly. The 2008 witnessed an 91 million increase and 56.2% growth compared with the same period in 2007. Now more and more

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people realize the convenience of the Internet. With the decline of Internet charges and the improvement of people's income standards, the Internet is gradually becoming affordable and accessible to tens of thousands of households. 28.9% of Chinese netizens once used mobile phones to surf the Internet in the first half of 2008, and the number of mobile netizens has reached 73.05 million. Using mobile phones to surf the Internet has become an important development trend of the Mobile Internet access. The primary constituents of China's netizens are young age group of 30-year-old and below, which accounts for 68.6 percent of Chinese netizens, or more than two thirds of the total population of netizens. In terms of internet users' education background, the popularization of the Internet made it accessible to low-end diploma population. With the gradual expansion of the scale of the netizens, the netizens' education structure is gradually approaching to the average of China's total population, a manifestation of Internet popularization.

At present, the number of home computers with internet access totals 84.7 million; in the first half of 2008 alone there was an increase of 6.7 million, with a growth rate of 8.6 percent for the six months. The proportion of netizens' using the Internet at home is continuing to rise, from 67.3% in December 2007 to the current 74.1%. The conditions of accessing the Internet has been improved, and meanwhile netizens use the Internet for an average of 19 hours per week. In the aspect of basic resources of the Internet, the domain names have reached 14.85 million, with the annual growth rate reaching 61.8%., and the annual growth rate of the IPv4 addresses is 33.7%; In the aspect of basic information resources, the number of websites is approximately 1,919,000, with the annual growth rate reaching 46.3%. The increase of the number of the website shows that China's Internet information resource is becoming more abundant.3

3. Higher education and the development of the Internet has laid a solid foundation for the development of DOE

The increase of the gross enrollment rate of higher education, especially the faster increase of the gross enrollment rate in cities, has laid a good foundation for the development of continuous education and the non-diploma educational training. The education development paths in developed countries demonstrate that higher education will be developed if continuing education is developed, and people will not only show emphasis on diploma education. In the less developed stage of higher Education, China's higher education mainly focuses on the diploma education, and "Diploma fever" has always been a social pursuit of the "Golden Cake" (a highly valued hot-pursuit). After higher education enters the phase of massfication, non-diploma education focusing on learners' ability and competency enhancement is bound to become a

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3 Data sources: the Statistics Report of the Situation of the Internet Development(July,2008), China Internet Network Information Center(CNNIC)
http://www.cnnic.net.cn/index/0E/00/11/index.htm

development trend, though adult diploma-education will still take the dominant position for a certain period of time. Since China has officially proclaimed the goal of building a learning society, life-long education system will be the backbone of a learning society, continuous education will become the main part of life-long education, and non-diploma education training will serve as the major form of continuous education. DOE has made contributions to the popularization of higher education, and will play a greater role in continuing education and particularly for non-diploma professional training.

According to a survey of netizens, it is believed that the Internet's first important role is to enrich netizens' recreational life (68.6%), and the second is to benefit netizens' work or study (68.1%). The majority of netizens have been used to their netizenship, and "feel that they can not live without the Internet".4 The reasonable development of netizens' demographic structure in China as well as the improvement of the infrastructure has provided an extensive social basis and resources guarantee for the development of modern distance education and continuing education.

II. China advocates the development of DOE

Modern distance education is a new type of education form which came into being with the development of modern information technology, and it is the main measurement of constructing the life-long learning system in the era of knowledge economy. Implementing the "Modern Distance Education Project" by making full use of the modern information technology on the basis of the original distance education can effectively bring the advantage of all kinds of existing educational resources into full play. It accords with the trend of the development of world's science and technology education, and it is also the strategic measure of developing education under the circumstance of the shortage of educational resources in China.

1. China launched the "Modern Distance Education Project"

In 1998, the State Council of China promulgated the Scheme of Education Rejuvenation Initiatives for the 2lst Century, proposing "Carry out Modern Distance Education Project to build an open education network and set up a life-long learning system. …Establish and perfect the system of the continuing education to meet the needs of life-long learning and knowledge update. Qualified colleges and universities should be able to offer courses of continuing education and build continuing education centers. Establish high-quality network courses by relying on the network of modern distance education and organize the first-class teachers to give lectures so as to make educational resources shared across time and space and provide a wide range of continuing education courses for managers and professionals from different walks of life.

In 1999, Chinese Ministry of Education officially launched the "Modern

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4 Data sources: the same as above

Distance Education Project". From March of 1999 to date, the MOE has approved 69 universities, including 68 general universities and a Radio and TV University, to carry out pilot projects in modern distance education. In 1999, Tsinghua University, Zhejiang University, the Central Radio and TV University were recognized as the first batch of pilot universities. In 2000, the Ministry of Education has approved 26 pilot universities such as Beijing University, Beijing Normal University and so on. In 2001, 14 other pilot universities including Xiamen University and Harbin Institute of Technology were approved, and in 2002, 22 more pilot universities like Dalian University of Technology and Southwest University of Finance and Economics were approved. These pilot universities which are mainly oriented to in-service personnel have made a positive exploration and the accumulation of the initiation and development of China's Modern Distance Education.

2. The Current Situation of the development of China's Modern Distance Education

Up to 2007, the pilot colleges has recruited a total of 6.7 million students, of which 3.2 million have graduated and 3.55 million are still in school, and among them in-service personnel accounted for 86.51% of all the students recruited. In the year of 2007, the total number of the students recruited was 1.35 million, of which the number of students recruited by colleges and universities accounted for 40%. China's Modern Distance Education focus mainly on diploma education and most of them are "Zhuanshengben", accounting for about 40%, and then "Gaoqizhuan" (about 25%) and "Gaoshengben"(University Bachelor's Degree Program Entrance Exams for high school graduates)(about 19%). By the end of 2006, the pilot colleges and universities have offered about 1560 majors in 299 categories, covering 10 disciplines such as management, economics, pedagogy, literature, law, engineering, science, agriculture, medicine and philosophy. Furthermore, the pilot colleges and universities has established some new majors like e-commerce according to need of the socio-economic development. In 2006, the pilot colleges and universities developed non-diploma education training for 3.45 million person times from more than 20 different sectors and industries.

The pilot colleges and universities have set up off-campus learning centers across the country. By the end of 2007, there have been about 9,000 out-of-school learning centers, of which there are 3292 teaching sites of TV universities and 4583 off-campus learning centers of regular universities. The off-campus learning centers of regular universities mainly include centers set up by the local educational institutions which were commissioned by pilot colleges and universities and centers belonging to the public service system of modern distance education. There have been 560 off-campus centers in western China, accounting for 16% of all the off-campus centers, and they will provide rich educational resources for the local needs. By the end of 2005, the

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pilot colleges and universities have established 18,000 learning resources, the main form of which is network courseware (totaling 10025, accounting for 67%), and there are other learning resources including special lectures, test questions database, database of answers and solutions, medium material database, teaching case database and so on.

Over the past 10 years, the pilot work has made great progress in China's Modern Distance Education. It also contributed to the improvement of the gross enrollment rate of higher education and has promoted the popularization process of higher education. Through the application and promotion of information technology, China's informational education has been promoted; The new teaching model which mainly focus on open education has promoted China's higher education reform; the opportunities and convenience provided for the full-time learning of in-service personnel have facilitated all people learning and the establishment of learning society. Meanwhile, there are some problems and challenges in the development of Modern Distance Education, which lie in the following areas: 1) Diploma education and non-diploma training haven't achieved a balanced development, which still can not meet the needs of learning society. The popularization process of regular higher education reduced the task of adult compensatory education. Life-long education system needs various kinds of education and training which oriented to changing people's concept and enhancing their capacity. 2) "Standardize the management, strengthen services and improve the quality" has always been the fundamental of the survival and development of distance Education, which can not be shaken. Pilot colleges and universities enjoy the right of autonomy in running schools such as independent proposition, organizing examinations to enroll students, determining the scale of enrollment, the fixed number of years of education and the period of validity of credits and so on, has put forward stricter requirements to ensure the quality of modern distance education of the pilot colleges and universities. 3) To support the education of poverty-stricken areas and areas inhabited by ethnic minority groups is an important task of distance education of the pilot colleges and universities. It is better to deliver the high-quality educational resources to the western region so as to make up for the imbalance between eastern and western education by the means of Modern Distance Education than any other education form.

3. The National Development Programming of Distance Education

As a programmatic document of the Party, the Report to the Seventeenth National People's Congress described education, health care, housing, pension, employment and improving people's livelihood as a key. In the chapter of "Give priority to education and turn China into a country rich in human resources", it says "Distance education and continuous education will be promoted to make ours a society in which every citizen is committed to learning and pursues lifelong learning." This is not only a clear goal, but also

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the guidance for China's modern distance education. From the analysis of the development trend of China's education, we have already seen great changes occurred in adult higher education and continuous education. It requires precise positioning to promote the reform and innovation of modern distance education and ensure the sustainable development of Modern Distance Education. Addressing people's demand for flexible forms of higher education and integrate various forms of adult education with the network technology as the main means to contribute to building learning society together.

III. A Learning Society needs DOE

The concept of learning society is from the book "Learning Society", published in 1968, written by Professor R. M.Hutchins, a famous American educator, former president of the University of Chicago. From then on, the international community has been carrying out the extensive research on learning society, learning group, life-long learning, and learning to learn, and so on. Learning society is a kind of social form with an ideal and convenient social learning environment and in this society it is the basic rights, fundamental task and basic requirements to learn for individuals, families, organizations, communities and governments. Learning will be a basic approach of raising the quality of life and being successful.

1. Learning Group and Learning Community

In December, 2003, In the national conference on human resources Hu Jintao proposed, "China shall further promote the concept of lifelong learning in the whole society, encourage people to participate in lifelong learning through various means and channels, further reform and develop adult education, strengthen the work of training various types of talents and continuous education, improve the training network oriented to wide coverage and multiple levels, promote to build the learning group and learning community actively, and build life-long education system with Chinese characteristics". Life-long education is a kind of education philosophy and education mode which is entirely different from the traditional education, and it has smashed the restrictions of school education extending education to the whole of human life and social organizations, and it will provide learning opportunities for every member of society when necessary. In the society of this kind, every citizen is no longer playing a passive role in knowledge acquisition but playing an active role in a self-motivated manner.. People are able to have a broad and equal access to education.

On how to build a learning society, many scholars in China have made some very good suggestions. We comparatively agree on the view that "Bring the entire education system into the life-long education system". 5A learning

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[5] Gu Mingyuan, Life-long Education and a Well-off Society, the Academic Journal of Beijing Normal University(Social Science Edition),NO.2,2003.

society should "break the boundaries of education, and attention should be paid to informal, non-diploma education." In the process of building a learning society, learning group and learning community are the most important forms. Developing community education and establishing learning community reflect the common requirements of China's educational development and community development, and they are important links of building life-long education system. Community education has the characteristic that the age distribution is wide, occupations are quite various, and the learning needs diverse. The construction of learning society needs to "improve the quality of the members of the community as the starting point, and make the curriculums diversified and of multi-levels as far as possible in order to meet the educational needs of each member of the community and adapt to each individual's characteristics, habits, hobbies."6 Basically, people are learning demands in a community are diverse and their continuing education is funded by the government and paid by themselves. In comparison, people's education demands within an organization are similar in terms of professional development and, a considerable number of them have received university education, thus they share comparatively similar education background as a group, and their continuing education is funded by their employers and themselves. Learning Organization brings training and continuing education for its members into the development of the organization and management. It promotes innovation through learning and pushes development ahead through innovation. We believe that the frontline of university continuing education should target learning groups, and colleges and universities shall play better roles in the establishment of learning groups. To promote the quality and capacity of working professionals is the main task of learning society, while to improve the quality of humanities, science and technology and professional ability of laborers is the main task of university continuing education

2. DOE is Fit for the Training of Application-oriented Talents

Building a learning society needs the participation of all people, including the participation of more working professionals. It is widely hoped that this kind of study doesn't need to study in full-time, but at the same time they can have more access to education, have an orderly, normative and fair environment for education and have teachers to teach them without discriminate… DOE, which has the characteristics of no limit of time and space, admitting leniently while graduating rigorously, stereoscopic education system and getting learning resources with network, is an effective way of building a learning society.

In the Internet environment, Students and teachers, learning groups are in the state of long-term quasi-separation, which provides students with a broader,

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6 the Office of the Leading Group of National Educational Science Programming, the key subject of the Ministry of Education, Review of the Research Achievements on "Research on the Establishing of Learning Community and Community Education Development", Contemporary Education Forum(the Research of Subject Education), PP5-10, NO.1,2008.

more flexible learning space with no limit of time and space. Schools have an impact on student learning through the planning and preparation of learning materials, provision of learning support services. Students don't learn knowledge mainly directly from teachers, but from well-designed interactive learning materials by teachers. The core value of DOE is its convenience for the people in-service who can get high quality education and improve their skills and abilities without leaving their jobs. The style opening and the credit system is conducive to the establishment of the stereo education system with more entrances and more exits, so that anyone at different stages of life can get the opportunities of learning and getting education according to the different needs by different ways and means. The school-running orientation of admitting leniently while graduating rigorously and of large quantities and wide area provides equal access to lower prices and better quality education for the people, especially vulnerable groups and people in poor and remote areas. Therefore, the network education is suitable for people who want to study on their own and have the ability of self-learning and strong self-control, it is also suitable for continuing education of employees after they finish higher education, and it is suitable for the mass education and application-oriented training.

The orientation of the application-oriented training of DOE is in line with the needs of the learning community. According to the characteristics of DOE, students' characteristics and the national requirements of training for different diploma education, DOE is suitable for the training of application-oriented talents who can adapt themselves to social change and the needs of jobs and have certain information literacy and self-learning ability. It also shows emphasis on quality-improvement, capacity-building and practice training in order to meet the needs of society. DOE is suitable to the develop the potential ability of on-the-job employees, make good effort to foster innovation and creativity and fully exploit the advantage of each student, so that students of employees on-the-job who have much contradiction between work and study can experience the joy of success in study, and go to the road of talent forming and success by making best use of the advantages. DOE is also suitable for industrial-school and it should implement the examination of ability and focus more on people's potential.

Information technology has been innovated and developed swiftly and has an extensive impact on our society. As information technology continues to make breakthroughs, the internet is poised to leading profound transformation to production and people's way of living. The idea of life-long education and learning society has become the guiding principles of promoting and implementing educational reform and development in many countries and regions, and has also become an important goal in the pursuit of social development and progress and a wide range of socialized educational practice. DOE is the major education form of a life-long education system and a learning

society. As a perfect combination of education and information technology, DOE will make greater contribution to human beings' knowledge exploration and make a bigger difference to the world.

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