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The Study of the Role and Effects of Vocational Education on the Local Economic and Social Development in China

Chich-Jen Shieh

Lynn University

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THE STUDY OF THE ROLE AND EFFECTS
OF VOCATIONAL EDUCATION ON THE LOCAL
ECONOMIC AND SOCIAL DEVELOPMENT IN CHINA

By

Chich-Jen Shieh

A Dissertation Submitted In Partial Fulfillment
For The Requirements Of The Degree Of

Doctor of Philosophy
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Ross College of Education and Human Services

at

Lynn University
Boca Raton, Florida
2003
The Study of the Role and Effects of Vocational Education on the Local Economic and Social Development in China

Shieh, Chich-Jen (Charles), Ph.D.
Lynn University, 2003

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ABSTRACT

This study examined the relationship between vocational education and the development of regional social economy, as related to the background of the current reform of the vocational and educational system in China. It also reviewed and analyzed the reform of vocational educational systems in six regions in China. In particular, this study investigated the interrelationship between labor force resources, urban and rural vocational education and the development of social economy. The special phenomena accompanying vocational education and the economic development were illustrated. Research explored the importance and impact of vocational education on the economic and social development.

From this study, guidelines for the development of vocational education to improve economic conditions in China were found. As disclosed by the analysis, the major problems in the current vocational education reform in China are the hindered mechanism, the insufficient outlay and the shortage of professional teachers. Vocational education, which aims at popularizing and propagating science and technology, hasn’t been able to bring new science and technology into the existing specialty and curricula structure in a timely manner. Suitable and corresponding adjustments have not been made. However, after China entered the WTO (World Trade Organization), changes in the industrial structure and the labor market, transformation of the economy and hi-tech and service industry exerted a considerable influence on the development of vocational education in China.
From these findings, it can be seen that the development of vocational education in China is closely related to the development of regional economy and society; therefore, it is necessary to study vocational education reform and development and the macroscopic background of the economic development, particularly regional economic development. At the same time, in accordance with the demands of social and economic development, it is also necessary to explore the new growth points in vocational education, especially how to establish life long vocational education institutions in enterprise communities or rural production communities.

This study made a layout for the developmental prospects of vocational education in China and pointed out that the most important competition in the future world will be the competition of science and technology, keeping qualified scientists and technicians, and vocational education which trains a great number of technical laborers. While mightily promoting the development of the market economy, China should prepare for the challenge of the globalization of the knowledge economy.
ACKNOWLEDGEMENTS

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FOREWORD

In order to allow readers to understand this dissertation better, an introduction to China must be given. The People’s Republic of China is situated in the eastern part of the Eurasian continent, off the west coast of the Pacific Ocean. It has an area of 9.6 million square kilometers and a population of 1.2 billion. It is a country with a history stemming from ancient civilization and diverse ethnic groups. China has a written history of nearly 4,000 years. Historically, it was one of the first countries to develop agriculturally and flourish in the area of handicrafts. China also touts a notably high reputation in both the silk and tea industries of Europe and Asia.

China built glorious past, as one strong dynasty after the other was established throughout history. However, in the 1850s, under the rule of feudalism, China became weak, politically corrupt and economically backward. After the Opium War in 1840, China gradually became a semi-colonial, semi-feudal society. The Chinese people waged unyielding struggles against the rule of imperialism and feudalism. In 1911, the bourgeoisie, headed by Dr. Sun Yat-Sen, overthrew the feudalist monarchy and established the Republic of China; however, being weak both politically and economically, the Chinese bourgeoisie could not counter the pressure brought on them by the imperialists and feudalists. Although the emperor abdicated, the fundamental contradiction of Chinese society was not resolved. China did not realize independence or modernization. Thus, the bourgeois democratic revolution failed in China. Fortunately, the Chinese working class, a new political force was waiting in the wings, and in July
1921, the Communist Party of China was founded. Under its leadership, the Chinese people fought bravely for twenty-eight years for national independence. After suffering many hardships and setbacks, they finally overcame the three big mountains: imperialism, feudalism and bureaucracy. On October 1, 1949, the People's Republic of China was founded, marking a new epoch in China's history.

China began her modernization in 1978, after the end of her disastrous Cultural Revolution. China's reforms, especially in the field of education, have always been of great interest to scholars and policy makers around the world.

With that in mind, this study unfolded through much research work in China. Different materials were also drawn from several American university libraries, as well. Nevertheless, the materials and information on hand were insufficient to finish the research, and this author ultimately traveled to Beijing to collect the balance of information needed. Vocational schools were visited and presidents and principals of those schools were interviewed.

School administrators, teachers, students and government officials, and others were consulted in many locations in China. Libraries visited included those of Beijing Normal University and Beijing University. Chinese educational processes and systems were characterized in-depth from the research, and the compilation of data resulted in the significant findings of the study.
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CHAPTER I

INTRODUCTION

In today's world, multi-polarity and economic globalization have made the competition of comprehensive national power more intense. National power is based on the power of a nation's economy, technology, defense and degree of national cohesion. International competition exists between comprehensive national powers and the most fundamental elements involved are technology, quality and quantity of human talent.

The World Bank Report in January, 1999, pointed out that the hallmarks of the 21st century are rapid improvement of technology, economic development and competition, and knowledge-based industries. Under the circumstances, national stability, as well as good education and good health of the people, contribute to the realization of rapid progress (Liu, 2001).

From the history of developed civilizations, one can see that the affluence of a nation depends on its natural resources, economy and manpower. Although China has abundant natural resources, it holds no superiority in this area when the resources are averaged out over the large population. Besides, China does not yet possess the conditions necessary to make use of its resources. Manpower is its best resource. With 20% of the world's population, China is often called “a big nation of manpower”. However, the education
received by most Chinese people is below the average of developed countries, and this has greatly determined the poverty of China.

Since joining the World Trade Organization (WTO) in 2001, China has made many social and economic reforms aimed at strengthening China by improving science, education and the adoption of sustainability. Chinese Laws of Education point out that in order to meet the demands for development of the socialist market economy and social progress, China has made educational reforms to promote the harmonious development of various educational programs and to establish and perfect the whole-life educational system. Vocational education is an important part of the whole-life educational system and is important in the strategy of both manpower building and strengthening China in science and education.

Finally, the Chinese government has become aware of the importance of vocational education. The questions remain: How can it be improved? Where should improvements start? How much manpower, money and material should be invested? How will the society reflect the changes? All these questions must be investigated.

Now China has entered the era of the knowledge economy. The Knowledge economy involves the possession, allocation, production, and distribution of knowledge
resources. It is an economic form based on new technology and the distillation of human knowledge. In the era of the knowledge economy, as the pace of technical development increases, and industrial configuration and techniques are upgraded, the traditional one-for-all school educational form can hardly meet the needs of economic construction and social progress.

A working man must continue to enrich and renovate his knowledge base in his working post, after receiving an education in school. Furthermore, in the era of knowledge economy, the speed of renovation and spreading of knowledge and technology is happening faster. The transformation period from superior techniques to economic superiority has been shortened, and the knowledge-based industries hold more proportion in national economy. The adjustment of economic structure happens faster and spreads to the whole world more quickly.

Technology has become the key element that decides the futures of enterprises. The imperative demands of the cultivation of people with innovative abilities determine the distinct status of vocational education in the national economy of China.

Purpose of the Study

This study was conducted in order to find the degree of influence vocational
education has had on successful enterprise development in China; to find how the vocational school relates to work production; and to find the status and role that vocational education has in the local economy. Communication with local governments and prosperous businesses was necessary. Six representative areas in China were chosen as sample areas. Three of them had better records with vocational education. The others had little or no history with vocational education. These six areas served as examples for comparison with each other to analyze the condition of vocational education and its impact on the local economy and society. This study explored a road to reform for vocational education in China and recommends valuable guidelines for the future.

Scope of the Study

In accordance with the questions stated above, this study was set forth to investigate the following topics:

1. Will the study, carried out by the same standard in varying locations, lead to varying outcomes, since the extent of mutual promotion between economic development and vocational education varies from one place to another?

2. Will the study of vocational framework help in understanding the status and role of
vocational education in China?

3. How do the local governments exert influence on vocational education? To what extent does vocational education influence local economic conditions?

4. What are the problems facing vocational education? How large and important are they? Are they avoidable?

Through the analysis of these issues, this study was carried out from different perspectives and by different means in order to make the subject clearer and understandable.

Research Questions

The research questions are:

1. What are the differences in the present situation of vocational education in different regions of China?

2. What is the influence of vocational education on local economic development in areas with or without vocational education?

3. What are the problems and effects of vocational education reform?

4. What are the best methods for improving vocational education in China?
Expected Results of the Study

The expected results of this study can be summed up as follows:

1. Vocational education is a crucial approach to human resource exploitation and will promote economic development.

2. The current situation of vocational education falls far behind the economic system of reform and cannot satisfy the great demands of needed economic development.

3. Vocational education must shape a perfect system in accordance with China's conditions and economic laws.

4. Vocational education is declining, so better internal and external environments are needed in order to make necessary political and economical reforms.

5. Vocational schools should separate from centralized administration and join with the economy. They should depend on themselves to set up their organization through site-based management and resolve their own problems such as the standard of teaching quality, lack of funds, and choice of textbooks. Vocational education should really serve the economy.

6. The government should give more support to vocational education, by giving overall consideration to comprehensive coordination and macro-administration.
Significance of the Study

Education is one of the key elements of social progress. In the early years of adopting reform and opening up the policy, former Chairman Deng Xiaoping has pointed out that the biggest problem dragging China behind is the problem of education. To develop vocational education is not merely a problem of education itself, but a problem of society, which influences the progress of society. How to mold China into a big nation of manpower resources is not a question belonging to China herself, but an international question asked by all world economists.

After entering WTO, China faced many challenges trying to enter successfully into the international economical arena. The education received by the Chinese people varies from one to another; especially the vocational education. It is far behind local economic developments. If this condition is changed, China will be able meet all challenges. Thus, the improvement of vocational education in China and the improvement of the educational level of the social laborers are quite essential to the globalization of the economy, technology and the pools of skilled workers.

This study focused on investigating the relationship between vocational education and social and economic growth. It started with the interaction of vocational education
and social development and the mutual and dependent relation of the two. Methods were proposed for the improvement of vocational education and suggestions given for social and economic development in China.

Background

Since social competition comes down to talent competition, it is easy to understand that economic development also comes down to development of talent. Chinese governmental institutions and departments have always attached importance to the cultivation of talent, and they are cognizant of the important role education has played in the construction of society and economy.

In June, 1996, the Chinese State Department stated that China should promote higher education through various positive means, and by 2010, the enrollment rate of higher education should be improved from 9% to 15% of the same population” (Zheng, 1999). On the other hand, sustainable developments of talent are often neglected, and this development can only be accomplished by a more effective system of vocational education.

China has adopted the policy of reform and opening up for more than 20 years, and during this time, vocational education has made progress in both theory and practice.
Various vocational schools and training programs have taken significant actions.

Vocational education, which has become an important component of China’s educational enterprise, has pushed the progress of technology and rapid development of national economy. This has helped to improve the quality of Chinese professional workers. A large number of laborers have been trained and talent for Chinese modern socialist construction has been applied, but the reform and development of vocational education still faces difficult problems. Some places have not yet noticed the importance of vocational education. Input is far from enough, and this has limited the building of a solid base and good conditions. The system of governance and schooling and teaching quality cannot meet the demands of economic construction and social development. The regulation of careers has not been effectively implemented, and this has in the frustration and lack of enthusiasm among trainees. The balance of different vocational schools in urban and rural areas is not balanced (Jiao, 2002). In order to address these problems, the Chinese State Department issued a document in August, 2002, which intended to promote vocational education from all aspects of educational governance, including financial budgets and promotional publicizing.

The document emphasized that all levels of the governments should strengthen the leading of the work of vocational education. Vocational education should be taken into
the general program of the local economic and social development, and be listed high on the governmental agenda. On the other hand, the document also suggested the government should help the vocational schools and training organs activate and protect the programs by the exertion of influence by industries, enterprises, medi-agencies and social groups.

As shown in Figure 1-1 and Table 1-1 below (Ministry of Education, 2002) the national vocational educational and training programs have been making strides.

**Figure 1-1**

The number of students on campus of middle vocational education schools across the country in 1980 and 2001 (unit: 10 thousand).
As shown in Figure 1-1 above, the students on campus of middling vocational education reached 2.27 million in 1980. In 2001, it increased to 11.64 million, about four times as more than in 1980. At that time, rapid expansion of higher vocational education came into being. As shown in Table 1-1 below, there were 386 higher schools set up independently in 2001, with student recruitment of 350,000 and 720,000 students on campus.

Table 1-1
Development Situation of Higher Vocational Education across the Country
(Unit: 10 Thousand)

<table>
<thead>
<tr>
<th>Year</th>
<th>Student Recruitment</th>
<th>Student on Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>3.01</td>
<td>6.31</td>
</tr>
<tr>
<td>1996</td>
<td>3.86</td>
<td>9.88</td>
</tr>
<tr>
<td>2000</td>
<td>19.43</td>
<td>35.12</td>
</tr>
<tr>
<td>2001</td>
<td>35.49</td>
<td>71.69</td>
</tr>
</tbody>
</table>


Conceptual Framework for the Study

When the aspects of the social position are analyzed, recruitments and government investments in vocational education seem inferior to general education; it appears to have
been treated as a second-level type of education. This is one of the basic reasons why
general education keeps steadily going up, and vocational education continues to go
down. This is because of government guidance (Meng, 2001). It is no wonder that the
parent of a vocational school student might consider his or her child’s entrance into a
vocational school to be a wrong choice.

What if a new framework could be constructed? Suppose the research objects in this
study were divided into two categories, i.e. the activity of education practice and the
activity of education science. Vocational education practices could be divided into three
categories: microcosmic, mean and macro. The activities of educational science like
sociology, economics and psychology could be used to analyze phenomena, movement
and problems of vocational education in a certain district. The findings could then be
elevated through theory to reveal the laws of movement.

This research was based on several premises. Under the new conditions, vocational
education has changed dramatically in China. Studies are needed to broaden, further and
surpass research on the functions of vocational education. Studies should not be limited
by “the theory of unique importance of natural science” or based on mathematics alone.
Research should take a more theoretical approach to social and cultural science and focus
on the economic and social implications of vocational education, making it take on more
This study focused on the economic effects of vocational education and proposed to gain better understanding of its basis, social value and epistemological theory in order to understand its status and effect in social development. The definition and categorization of vocational education, and the understanding of the social and economic effects and their characteristics, should be researched from an economic perspective. This assists in reaching a deeper understanding of vocational education's social position and economic value.

This study investigated the sociological meaning of vocational education and started from the changing social system to determine how to best discover the relationship between society and education. Vocational education should be developed in the light of local conditions to make it serve social needs better, so that it can promote the advancement of society and perfect social structure. Then, the aims and functions of vocational education can be interpreted with a wider scope.

Statement of the Problem

Vocational education and economic development are mutually supporting.

Vocational education promotes economic development and stimulates vocational
education. Similarly, social development needs vocational education, and vocational education influences the progress of society. The mechanism of education’s goal is to exploit human resources, but the key element of human resource exploitation, promoting vocational education, has not drawn enough attention in Chinese society. Although, the government has emphasized the importance of the status of vocational education in many official documents, it is actually in a state of paralysis, and vocational education’s situation has deteriorated since the late 1990s. For example, the health schools established in the 1950s have difficulty recruiting students now, and there is a shortage of nurses.

One of the problems existing in the Chinese educational system today is that most of the students choose to take the entrance examination for higher education rather than attend vocational schools. Technical education is far more neglected than basic education, and the higher education diploma is believed to be more important than the practical one of vocational schools. There are not enough capable workmen on the front line of production. Many of the laborers are not qualified, which make the production rate of products only 70% of what it could be. This directly leads to the annual loss of 200 billion RMB. Recent accidents caused by weak vocational expertise and inadequate professional techniques have made enterprises lose more than 50% of their income.
Developing vocational education in China has become a crucial issue (Jiang, 2002).

Vocational education is related to social stability. Many of the reforms taken have produced many laid-off workers. If the re-employment problem is not solved, social stability could be in danger. It might be said that vocational education ensures social security; therefore, the development of vocational education is one of the keys to strengthening human quality of life in China.

Limitations of the Study

This study attempted to increase the understanding of the general situation of vocational education in China, as well as individual and regional situations. Moreover, it reviewed and analyzed the governmental policies of western areas to determine the present conditions and future prospects of vocational education in China.

The six regional areas of China chosen for the conducting of interviews and case studies included: (a) Shanghai Huangpu District, a developed region with commercial characteristics; (b) Juye County of Shandong Province, a developed region with agriculture as its pillar industry; (c) Changdao County of Shandong Province, a developed region with fishing as its primary industry; (d) Dongxiang County of Gansu Province, an economically and socially depressed region with minorities constituting the
majority of the population; (e) Zhangjiachuan County of Gansu Province, a backward region with animal husbandry as its primary industry; and (f) Jinzhai County of Anhui Province, a backward region with agriculture as its primary industry.

The span of time chosen to be studied was the 20 years since the adoption of reform and the opening up policy, from the when China entering WTO. The reason this span of time was chosen was that, during this period, the situation on China has changed rapidly, including the education system and social economy. With regard to enterprise reforms, vocational education has played a most important role in the national economy.

The focus of this study included both middling and higher vocational education. Vocational education contains the elementary, middling and higher vocational education, which is classified by its function. The elementary of vocational education rose in the 1950s to serve the planned economic system, but after China entered into the market economy, it needed to be adjusted. Middling is established on the base of the elementary and has obvious market influence but low quality, which shows that the vocational educational system needs to be improved.

The higher vocational education has a much shorter history, but it has developed rapidly. Recent growth in the number of higher educational students has caused deterioration of the number and quality of students in vocational education. This paper
will focused on the middling and higher schools, for they are more influential to the economic and social development.

Definition of Terms

Vocational education, according to United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1998, is “vocational or technical education designed to guide students to master practical skills, specialized knowledge and cognition in certain specialized professions or trades as needed in specific areas” (Jou, 2001). Elementary vocational education in China includes those courses taken for basic skills training, and middling vocational education refers to courses taken graduates from junior high school. Higher vocational education refers to the courses taken by seniors in high school.

The planned economic development mode is the command type of management from above to below. The central government works out the economic development plan, and governments at different levels make their layout layer upon layer. Enterprises are responsible for implementation.

In a market economy, economic activities flow freely according to the objective regular pattern. The flows of resources, talents and capital have broken through the
blockage of the planned economy and have developed independently, which increases the inter-regional influence and dependence.

The knowledge economy is one in which the enterprises have become the principal part of the market, and they are no longer restricted by a planned economy. They are under the management of the market economy, which improves competitive ability.
CHAPTER II

LITERATURE REVIEW

According to the Vocational Law (1996) of the People’s Republic of China, vocational education is an important part of the country’s education program, and a significant means to accelerate the development of economy and society while enhancing labor employment. Every country has its different statements on this issue. Currently, the most acceptable one was given by UNESCO (United Nations Educational, Scientific and Cultural Organization) in 1998. It says that “vocational or technical education is designed to guide students to master the practical skills, specialized knowledge and cognition in certain specialized professions or trades as needed in specific areas (Jou, 2001).

In his article, Jou quoted Organ, a famous American economist, as saying educational training is the only access to success, and vocational education should become one of the most important economic exploitation items. He reasons that a country unable to exploit its people’s knowledge and techniques doesn’t have a bright future, and in the whole education system, vocational education has the closest relationship with economic development.
New Positioning of Technology and Professions in the 21st Century

In 1995, NCRVE (National Center of Research of Vocational Education) pointed out "America and other industrialized countries are heading towards their economic development based on learning. The change in units is taking faster steps. The constant change of working positions makes study necessary for everyone at any time. The goal of education is to prepare students for future work and make them acquire the basic skills of working while learning. So, a course concerning only techniques of certain vocational post should be excluded." (Mao, 2002).

The World's Technical and Vocational Education Convention hosted by UNESCO was held in April, 1999. In the themes of this convention, they pointed out “The basic challenge is the necessity to adjust and compete in the rapidly changing environment. A focal point of competition in the 21st century is to train an energetic and flexible laboring force.” The new global environment desires a new place of technique and vocation to give a better response to the demands of students, workers and employees. Not only does technical and vocational education provide training for the labor world, but also it must bring up a new generation of laborer in a life long study (Lu, 2000).

“According to the prior accumulation of human capital theory, only when the level of exploitation of human resource is superiorly collocated with that of the material capital
can it boost productivity; That is to say when the inner qualities of laborers respond to the outside environment they can encourage economic development” (Liu, 2000).

“In China’s current population resources, manpower resource is much more abundant than talent resource, which is the real pressure on the development of knowledge economy. To improve the social adaptability of sustaining education, education location must be directed to the civil vocational education of all the society, i.e. popular education” (Shiue, 2001).

Development of Vocational Education since the Reform and Opening-up

Since the adoption of the policy of reform and opening-up of China in 1978, “vocational education has generally formed a system with Chinese characteristics that has linked elementary, middling, and higher vocational education with each other as related to general education and adult education. It combines academic education with vocational training. In 2001, the elementary vocational education system of China recruited 460,000 students, with a total of 830,000 students on campus. Also in 2001, middling vocational education of China had totally 11,640,000 on campus, including 3,980,000 students recruited in that year. At present, there are 386 independent colleges and universities, which recruit 350,000 students and have 720,000 undergraduates.
Compared with 1980, the size of junior vocational education has been enlarged more than four times, and the number of students enrolled in independently set up vocational and technical colleges has increased 11 times. The development of vocational education not only extends to the overall scope of Chinese education, but also makes a historic change to Chinese educational structure. Notably, the development of junior vocational education optimizes the junior high school educational structure”(China Education News, 2002).

Lan (2002) stated that there are altogether 17,000 vocational schools of different kinds and levels with 2,090,000 employment training centers and more than 400,000 employee training centers, adult economic training schools, and various social training agencies. Those training agencies and vocational schools admit tens of millions of trainees each year. He concluded that an important system with a complete set of vocations and distinct levels consisted of high, middle, and low has already come into being on the whole in China.

Vocational education plays an active and important role in the economic development and social progress. Therefore, it leads to a kind of factual social demand for middling vocational education. In recent years, thirty percent of the new employees accepted by enterprises in Shanghai came directly from middling vocational school graduates.
According to surveys conducted by some enterprises, ninety-five percent of middling vocational school graduates are evaluated as satisfactory and very satisfactory. Sixty-six percent play a rather important role in society. According to the survey conducted by Beijing Meters and Instruments Technical School, 37.5% of the total employees in high-tech corporations in Zhongguan Village in Beijing are from such middling vocational schools. There is also 90% among the 600 employees of Pingdu Refrigerator Factory, Haier Group in Shandong province who graduated from middling vocational schools (Yang, 2000).

Challenges Facing China's Vocational Education

China’s top vocational education is still restricted to the junior college education level. This is abnormal because the dynamics of the senior vocational education are not fundamentally different from those of any other countries. In Chinese society, there are many needs for college-level talents with applied techniques. After the entrance to WTO, international competition was destined to demand a rapid advancement of enterprise management and technique. Thus, the imminence of improving the education level of talents with applied techniques will be accelerating. The senior Chinese vocational and technical education level surely needs to be improved (Jau and Lee, 2001).
In recent years, China's vocational and technical educational development has been facing hyper-normal challenges. Its preponderance has been beyond the prediction of vocational educational experts. The main reason for this challenge is the variation of the exterior environment for China's economic development, i.e. the process of economic globalization and its impact on China's educational policy selection (Ma, 2001).

At present, the concern is that on one hand, some officials have partial opinions about middling vocational education. On the other hand, there appears to be an obvious fickle psychology within middling vocational education. Educators are anxious to upgrade and reform and are concentrating on the proportion of students entering schools of a higher grade, but they are attending only to the quality of source students while neglecting the employment rate and attaching importance to economic benefit and belittling quality of education (Jiang, 2002).

It is reported that in 1999, among the 47 most important countries and districts all over the world, China's position in scientific and technological competition fell from 13 to 25, according to the international competitive power report issued by the world's Management and Development Research Institute in Lausanne, Switzerland. The number of people undertaking scientific research and development is on the top of the list, but the availability of qualified engineers is lower than ever (Meng, 2001).
Due to historical events, the minority dominant areas do not have the necessary social conditions for the development of vocational education. Though many vocational and technical education schools have been set up, they only meet the needs of a planned economy. They are unable to push the development of society, economy and culture in the minority assembled areas (Luo, 2002).

Demand for Vocational Education from China’s Market Economy

Jiang (2002) pointed out that there is a lack of successors to highly skilled workers, embodied by the senile age structure and especially by the outdated structures of expertise and technical skills. It is easy to predict the market demand tendency for skilled workers. So, it is quite difficult for those farmers with only junior high school educations to obtain jobs in the cities. He predicted that even if these farmers do get a job in some enterprises, it will still be difficult for them to further development, and this may have negative effects on the social public security.

After entry into the WTO, China made further adjustments to the structure of economy, industry, trade, and even education. In the short run, it will bring the industrial economy, beginning with an elementary market, into the track of a highly worldwide competitive knowledge economy. This will have a strong impact upon the old ideas, old
systems, irregular school-running behaviors, and lagging management modes of teaching (Xia, 2002). This impact will require that the educational system be more open to the market, demand more entities to run schools, and further develop the local-run education and schools jointly with international cooperation. Xia stressed that it is necessary to compel schoolmasters to step from behind the back stage to the front stage and run schools independently, in order to meet the market demands at home and abroad. China’s entry into WTO intensified the competition in the labor exchange market, and the system, management, service, and thinking mode of the territorial labor market adopted the market principle (Zhao, 2002).

Wu (2002) stated after that China’s entry into WTO, the education market in China became like a huge piece of cake, which was coveted by more foreign multinational corporations and educational agencies. Therefore, in face of the new challenge, there must be a rapid response to prepare and build up the market consciousness. Urgent tasks are in front of the Chinese educational administrative departments and schools. Facing the increase of foreign agencies in China’s education market, and determining how to compete with them will become the mission of China’s educational reform.

After entry into WTO, many changes took place in the external environment of enterprises, and the binding force of market became more and more obvious. However,
the majority of our enterprise administrators have never accepted systematic education on a business administration level. They are strangers to the new modern management concepts, methods, and skills. They cannot make skillful use of the computer and Internet. After an enterprise takes part in international competitions, technical staff has an urgent need to learn new techniques in order to upgrade the technical content of products (Hu, 2000).

Wang (2002) held the view that under new economic situations, laborers should possess a strong adaptation capability to transplant newly-acquired knowledge into new the environment and should update their knowledge rapidly to meet the demands of new branches of trade and vocations.

Prospects for the Development of Vocational Education in China

Due to many traditional factors in the practical development needed, viewed from outside aspects, China’s vocational education, especially middling vocational education, faces double layers of difficulties in order to adapt to the conversion of a studying society. It is important to let go of the old conservatism of technology and tools and commit to the ongoing higher education development and non-vocational high school education reform.
Viewed from the interior aspects, the reform on technological colleges and the rise of professional degree education originated from the thought of seeking truth from facts. Reformers are concerned with the standards of vocational and practical modern talents; while the reform on non-vocational high school education is in no way to go farther away from vocation and technique, but instead to draw on the lessons from vocational education. In such a situation, if the vocational education falls back and consolidates itself, it might be on the road to draining the pond to get all the fish. If we change our line of thought and keep forging ahead to bring advantages into full play to achieve characteristic innovations under new circumstances, expanding it from both directions -- one to upgrade to higher vocational education and another to borrow ideas from non-vocational high school education -- it does not necessarily mean that we cannot create a new situation for development (Yang, 2002).

Li (2002) said that the entry into WTO would have a positive and facilitating effect on the updating of China’s educational concepts, the consummation of educational system, the content enrichment of education, the application of new techniques, the improvement of educational administrative level, and the exchange of teachers. He suggested higher vocational education should enthusiastically introduce foreign advanced courses, textbooks, teaching methods, and teaching technology to shorten the distance.
from them, and thus speed up the development.

Modern society’s demand for people’s working capability is changing. It is inadequate to just improve professional skills at a post. What is most important is the ability to meet an emergency, existence, and development. Therefore, we should acquire further understanding about the objectives of vocational education, which shall not simply aim at a certain post, but expand it to the whole career of the laborer. As a result, the nature of vocational education will change into lifelong education rather than the end of education (Guo, 2000).

Higher vocational education in China is still limited to junior college level, which is by no means a normal phenomenon, for there is no difference between China’s developing higher vocational education and foreign countries’ (Zhang, 2000). Our society also demands technical-application talents on the college undergraduate level. After China’s entry into WTO, international competition has certainly demanded a rapid increase in the administrative and technical levels of enterprise. Therefore, stated Zwang, there will come an ever-increasing impendence to enhance the educational levels of economic-application type of talents. As a result, the level of China’s higher vocational education will certainly be heightened.

Currently, vocational schools meet difficulties in both recruiting students and
employment of graduates. In order to get out of difficulties, we must deepen educational reform and improve quality of teaching, beginning with a new school-running system in which teaching and production are connected, and school and enterprise are integrated. Then, schools will present a new approach to the aspects of education, teaching, production, scientific research, and service. Schools will become more connected with society, and more suited to the needs of economic development. Eventually, schools will be able to achieve better economic and social benefits and can get the approval from society and trainees (Di, 2002).

Gaps exist between the real condition of China vocational education and that described by the State Education Commission. The data provided by the government should be correct. The deterioration of vocational education is true. So, where is the problem located? The research on the roles of the developed and the less developed districts in economy and society shows that the accurate meaning of the exploitation of manpower talents ought not to be reflected only in the figures of the Statistics Bureau reports. It should be exhibited in the practice of education and economic development.

The exploitation of human resource mainly refers to the process in which the country or enterprises educate all the personnel, expand their intellectual resources and give them vocational training to provide various talents for the society. The development
of vocational education supplements the quality and quantity of manpower resource with each other in order to better the service for local economic development. Currently China has abundant manpower resources but their quality is not high. The reason is that many problems exist in the manpower resource development process. Among them, some are surely concerned with general education, but those related directly to economic development are more prominent. They can be generalized as follows:

First, the structure and frame of vocational education has not yet formed a system and developed on a large scale in China. After reforming and opening up, vocational education has achieved great progress with the development of regional economy and the attention given by central governments and local governments. The proclamation of the State Department Resolution on vigorously promoting the Reform and Development of Vocational Education, in 2002, indicates that a comparatively “perfect” vocational education system is taking form. Nevertheless, compared with the demands of local economic development, the situation is still lagging behind. For example, the number of schools is still insufficient, and the teaching establishments are simple and crude. In some poor and remote mountain areas and minority predominant areas, the function of vocational education is anything but an impetus for the economy, especially in border areas such as Tibet.
There exists a phenomenon called “three shortages, two lowness and one highness”, i.e. the shortages of useful textbooks, experienced teachers and students inside schools, the lowness of recruitments and the rate of consolidation and the highness of dropout rate. While science is promoting the development of economy, we are still have an increasing amount of literature, science and technique illiteracies. The investment for vocational education is insufficient. Some local governments are still involved in the shortage of food and clothing and pay no attention to vocational education. For example, the payments in arrears with education are enormous. Teachers have low salaries, and many quit their jobs. Teachers’ ranks are unstable which affects teaching quality. Hence the low level of vocational education is destined to influence the cultivation of human talent resources and is unable to meet the needs of China economic development.

Secondly, due to the lag of China’s vocational educational development, laborers’ professional skills can’t meet the needs of economic development. Regional vocational education development takes on an imbalanced situation because of social, historical, and geographical and natural reasons. This results in economic imbalance. Then the phenomenon that is the east part of China is rich, while the west part emerges poorly. Traditionally the eastern part has a higher living standard, while the western part is comparatively poor.
Despite China's entrance into the WTO and the joining of China's education with the world's, the introduction and implementation of modern vocational education theory and teaching methods will still take a long time. Local vocational education is developing slowly according to the means, which lead to the fact that local laborers have lower professional skills. The level of development of technology can't meet the standard that enterprises need. Management is poor, and product quality can't reach the standard. Therefore, vocational education proceeds with difficulty in the fierce market competition.

Third, there is a grave lack of all kinds of specialized talents. The social service of heuristic education is desperately needs to be developed. Because the remote and poor districts have lower economies, cultural and environmental levels, vocational education fails to attract students. With the adoption of reform and the opening-up policy, many technicians and skilled workers went inland to southeastern developed regions. This in turn caused more insufficient supplies of talent in those areas. However, the developed regions have a surplus, and college graduates find it hard to acquire jobs there, let alone graduates from vocational education.

The regions, which economically lag behind, have lower scientific and cultural qualities. Tradition and local customs force laborers to become accustomed to traditional production methods and to resist new advancements. Economically they rely on the
government. In daily life, they settle for only having enough food and clothing. They lack enthusiasm for self-development. They only engage in some simple physical labor or depend on the utmost exploitation of natural resources. The social service of heuristic education cannot be launched under those circumstances.

Fourth, there is a huge gap in human capital investment, and the benefits are not distinctive. Human capital refers to the ability and skills acquired which can be priced in a labor market. It is formed by the investments in humans’ educations and training among which includes the expenditure on vocational education. The economic gap between less developed areas and the developed areas tends to be wider because of the gap in the general level of regional economic development. In addition, China has adopted a traditional economic development strategy over long periods of times, which relies on the exploitation of natural resources and emphasizes material capital investments. As a result the human capital investment has a huge gap and the outlay of vocational education is insufficient. This reduces the yield rate of educational investment.

Although the development of vocational education is still immature, it occupies a necessary and important position in human knowledge as a subject closely linked with human resource. It started with the beginning of modern science and is progressing along with the development of modern science.
In China before 1949, many scholars carried out classified research studies related to education. Among them were Chen Kemei, Sun Bangzheng, Wang Xiunan, and others. According to them, vocational education, higher education, teacher training education, high school, elementary and kindergarten education are collectively called “schooling”.

So, Chinese scholars have realized the importance of vocational education for quite a long time and classified it as an indivisible part of schooling (Nanking Normal University, 2002).

In recent years, the research on vocational education has been a hot topic in China. Some discuss education reform from an international angle. They believe that vocational education reform sees the development level and condition of developed countries as reference systems and goals to promote the process of economic and social modernization. It’s a process heading towards accelerating the education reform and development. Some studies are from the angle of the goal of education cultivation. They state, “We should cultivate elementary and middle level skilled talents, and independent commodity producers and managers. They have higher qualities and comprehensive abilities. They can adapt to the changing working positions and are furnished with the ability for life-long study and innovation” (Huang, 2001). Some see it from the angle of the modernization of education. They hold that “the modernization of vocational
education is a continuously productive and self-perfection condition. It takes the general goal of education moderation as reference. It aims to enhance people’s vocational abilities and encourage the harmonious development of education and society” (Jou, 2000).

When discussing the problem from the historical point of view, it can be seen that China’s vocational education rose later than that of the developed countries. In the fifties, the technological schools, in the initial stage of socialism, were in an embryonic step. Students aimed to master the basic working skills and to feed themselves. However, at that time these schools boosted the economic development. In the sixties, vocational education encountered disastrous calamity during the Great Cultural Revolution. In the eighties, after the adoption of reform and the opening-up policy, it gained social attention. During the prosperous period in 1978, there existed a potential crisis, the deviation led by the educational circle guidance. At that time China’s population increased dramatically. General schools couldn’t accommodate so many students.

Vocational higher schools were developed which formed the foundation for the development of vocational colleges and workers' universities. At the very beginning there existed an academic trend. Vocational education should address occupation education and enhance the development of social employment. Generally speaking, from
the end of the eighties to the beginning of the nineties, vocational education was at the peak of rapid development. It attracted social attention to the number of schools and their sizes. The social and economic background of that time was that China began to reform and open to the outside. The country was focusing on developing service trade. The need for personnel mastering general skills was great, and in turn, it encouraged the development of vocational education.

In the nineties, the ratio between elementary vocational training and general training was 7 to 3. The lack of teaching quality was evident. The need of short-term economic interests and the latent academic tendency caused the great decline of vocational education from the latter nineties until present. This decline is still occurring and cannot be resolved during the short term. This condition indicates that decision making of vocational education development fell short of anticipation and plans, and lost pace with social economic development. Many education researchers deem that vocational education is going astray. Vocational education in schools is cold and cheerless, while social training is quite hot and prosperous. The development of regional vocational education is imbalanced. Education should be directly proportional to economic development. The inconsequence of the regional economic structures has lead to a shortage of training positions and uniformity of specialties. Conversely, in the industrial
areas and cities, there are abundant training positions and specialties that have been set up. However, in the manpower market, the supply exceeds the demand. Those positions providing better working conditions are warmly welcomed. Adjusting the number of vocational schools to the changing economy is what research is concerned with.

Vocational education is still not mature either in whole or in part. Nevertheless, from another point of view, it is due to the immaturity that it still has within a wide range for development. Its forms of expansion can be as follows: First of all, most of vocational education areas are still not mature enough and need further development. Secondly new challenges will come forth with the development of vocational education. The emergence of new problems and conditions provide wide space for expansion.

Rousseau, the French enlightenment thinker, once said that knowledge about humans is most useful while the most imperfect one in all kinds of human knowledge. Vocational education falls into human science. As for its appliance and immaturity, Rousseau’s assertion is applicable. It does not have a long history. Research on this important topic should go on regardless of the problems and issues it discloses or the effects it reveals.
CHAPTER III
METHODOLOGY

From the view of sociology and pedagogy, this study has been conducted to better comprehend the conditions and change of vocational education in China since 1979, especially after the entrance to WTO. Because this change is closely linked with local economic development and directly guided by local government, it determines the living standards of millions of people. It seems to be a barometer, which indicates regional political trends, economic strength and the quality of regional human resource.

Vocational education is a significant research area in the educational circle and has been placed in a strategic position where it can drive the development of regional economy.

It can be seen that vocational education is not merely a problem pertaining to educational related subjects; but also, it involves human politics, economics and social studies. Currently, some scholars bring with them special liabilities in probing into vocational education problems. For example, statistical studies of studying the profit problems of vocational education constantly focus on short-term interests and neglect long range interests. When education investments exceed return, hesitation emerges.
“Wait until the strength is stronger and then think about the development of vocational education.”

The research of the pedagogical scholars can follow the wrong path and compared with higher education, vocational education may always seem like a low-level education and reflect no national power. Therefore, it appears that it should be in a secondary place. Now the government has become aware of the importance of vocational education, but, does not know how to improve it. Where should improvement start? How much manpower, money and material should be devoted? How will it be reflected in society? All of these questions should be investigated. The outdated methods of the fifties do not function anymore. How should the government handle all of these kinds of problems?

This study involves comparisons of vocational education in developed districts and in backward districts. It used qualitative analysis to discover the similarities and differences in the districts where there exists vocational education and those where no vocational education systems exists.

Research Questions

The research questions for this study are as follow:

1. What are the differences in the present situations of vocational education in
different regions of China?

2. What is the influence of vocational education on the local economic development in the areas with and without vocational education?

3. What are the problems and effects of vocational education reform?

4. What are the methods of improving vocational education in China?

Research Design

This study compared the vocational education in developed districts and backward districts. It involved longitudinal and transverse comparisons. Longitudinal comparison chiefly centered on the analysis of the status quo and the future development tendencies of vocational education in a certain region. Transverse comparison mainly referred to the comparison among economically developed regions and backward districts.

Sampling

The six regional areas of China, chosen for the conduction of interviews and case studies included: (a) Shanghai Huangpu District, a developed region with commercial characteristics; (b) Juye County of Shandong Province, a developed region with agriculture as its primary industry; (c) Changdao County of Shandong Province (a
developed region with fishing as its primary industry, (d) Dongxiang County of Gansu Province, an economically and socially depressed region with minorities constituting the majority of the population;

(e) Zhangjiachuan County of Gansu Province, a backward region with animal husbandry as its primary industry; and (f) Jinzhai County of Anhui Province, a backward region with agriculture as its primary industry.

Procedures

Qualitative analysis was used to discover the similarities and differences in the districts where there exists vocational education and those where it doesn’t exist. Emphasis was placed on the interdisciplinary study, organically connected manpower, economy, and education, in order to give prominence to interdisciplinary characteristic of research.

Data Collection

This study selected some objects, for instance, that included different kinds of schools and enterprise employees, and then explored the inner connections and uncertain factors between vocational education and economic development through investigations.
and case studies.

Analysis of Data

When collecting data, triangular corroboration analysis, an effective method for qualitative research, was used while studying vocational education and economic development. Data was gathered using various sources or methods to keep the data coherent, truthful and accurate when evaluating outcomes.

In an effort to try to figure out the laws and methods of change and development, development of local vocational education was summarized along with the cultural level and manpower educational level since 1978 (the beginning of the reform and opening up of China). On this basis, correlation among educational systems, the economies, and the populations were studied, in order to determine the inter-restrictions among them. Finally, constructive suggestions were put forward on vocational education development, economic development programs, and economic growth patterns.

Questions Designed for Different levels of Interviews

This interview level was very important. First of all, it helped to find out what the general situation of local vocational education was. Secondly, it helped to discover the
state of local economic development and the average income. Third, it helped to decipher
the quality of the local manpower resources. With analysis based on those three factors,
the answer to the question how does vocational education influence the economy could
be found.

The Interview for the Local officials

1. What is your understanding and attitude toward the local vocational education
   school?

2. What do you think is the level of influence of vocational education is on the
economic development? Does it push or hamper, or have nothing to do with, the
economy? Give some examples.

3. What do you think the focal point is pertaining to local vocational education
   reform? And what is the impetus? The obstacles?

4. What are the new policies made by the local government on vocational education
   reform? What about their effects? Give some examples.

5. What is the public opinion of vocational education?

6. What are your suggestions for vocational reforms?
The Interview for the Vocational Schools

The interview for the vocational schools was key for this study because vocational schools are the main bodies of the vocational education system, and are the direct players in the vocational education reform. There is a necessary relationship between the successes achieved by vocational schools and vocational education. The research on the vocational schools could help to understand the situation of the vocational education itself. For example, the analysis on the quality education, education implementation, the faculty quality, the situation of the students and the employment rate could help to find the prospects and destination of the vocational education reforms. The questions for the interview of the vocational schools were:

1. How do you carry out the educational agenda of China? How do you implement the teaching schedules?

2. What do you think are the key problems of the vocational education?


4. What is the layout of your school’s future? What kinds of measures will you take to achieve the goals set forth? What are the present effects?

5. What is your attitude toward vocational educational reforms?
6. What is the current status of the school facilities? What is the current status of the
students?

7. What are the prospects for employment for graduates?

*The Interview for the Enterprises*

The interview is not for all the enterprises, but for those who have vocational
schools or training programs, or have connection with certain vocational school that train
the employees. Through research on the enterprises, using the graduates from the
vocational schools, the demands of the enterprises on the vocational education were
found. The examples obtained in this kind of interview were essential to this study. The
questions for the enterprises were:

1. How many employees have you recruited from the vocational school during the
   past two years? What kind of role have they played in the production, promotion,
   or inhibition of your business? Are results obvious or not?

2. How do you train employees during enterprise reforms? What are the effects?

3. What is your opinion of the present vocational education system?

4. What are your suggestions for vocational education reforms?
Implementation of the Study

Implementation of the study included evaluating the general status of affairs, consulting materials, making the indices precise, selecting regions, formulating investigation and interview techniques, reviewing case studies, and summarizing results.

This study addressed the following aspects in order:

1. Prior to the study, a basic study program was conducted to prepare an allocation map of vocational education in order to avoid analyzing the problem from a static perspective. It was impossible to investigate all 31 provinces and municipalities directly under the Central Government all over the country. Also, it was unnecessary to do so.

2. The researcher selected representative districts and events to conduct a qualitative study and find which vocational education facilities ran well and which ones ran badly.

3. This study resented a review of the literature and discussed material regarding vocational education in Mainland China to get a clear understanding about its existing situation and the progression of academic research on vocational education and economic development. This study also looked for the accurate cut-in points beginning with vocational education, economic development, and manpower...
educational levels. Then, they were compared.

4. The comprehensive analysis achieved in this study can assist in understanding the relationship and framework of vocational education in China as a whole. The concept of vocational education was not confined to a single district. A better understanding of vocational education in China and its future development was revealed.

According to the allocation of China's economy, the eastern part of the country reformed earlier and is taking faster steps. Therefore, its economic conditions are better. On the other hand, the original economic base is weak in inland areas and in the regions where the minorities live in compact communities, like western China. In these areas, people's ideas lag behind the times, and the reform began later.

5. To solve the imbalance of economic development, the country put forward a strategy to develop the western region more, including the development of vocational education. Therefore, in the case analysis of this study, six research areas were selected, three from developed areas where the average income of each person was beyond 30,000 RMB annually, and three from the less backward areas with 3,000 RMB.

This study conducted interviews in order to obtain information and data.
Participants consisted of members of the education department of the government, factories, and schools.

The main purpose of this study was to comprehend the current situation, teaching quality, and influential factors of vocational education in China and to study the future of vocational education there. Through the educational institutions of the government, the general situation of vocational education, its system, structure and impact on society and its economy were determined. Through investigation of factories, this study figured out vocational education’s function in production and offered advice for improvement of the system to vocational education in China, according to social needs.
CHAPTER IV

RESULTS

In this study, six different regions of China, three developed and three backward, were chosen for the case study and interviews. Here, it should be noted that in China, there is a difference between regions and counties. Both of them are administrative units with regions referring to the administrative units within cities and to the administrative units in the countryside within counties. Regions and counties are administrative units at the same level. In other words, regions and counties are ranked administratively the same. This study carried out the comparative study incorporating regions and counties at the same level.

In the 20th century, with its' in-depth reform, vocational education draws more attention of central government and local governments. The reason is that from the economic development of China it is possible to obtain information as to whether the districts, where vocational education is stressed, have a rising economy. Districts that are backward in economy usually have a problematic or even paralytic vocational education. Vocational education itself can create prosperity. It requires the acceptance of the government and the support of the whole society including enterprisers, bankers, businessmen and educators. If these people do not identify with the common education
aim that vocational education can boost economy, then education will be external, lingering outside market economy and will find its place of importance. Or, the society may realize its importance yet not place it in a suitable position and delay in developing it. Eventually the local economy will be undermined.

Data Analysis

This study conducted the following steps:

1. First, it compared vocational education in developed districts and backward districts. This involved longitudinal and transverse comparisons. Longitudinal comparison chiefly centered on the analysis of the status quo and the future development tendency of vocational experience in a certain region. Transverse comparison mainly referred to the comparison among economically developed regions and backward regions.

   The six regional areas of China, chosen for the conduct of interviews and case studies in this study, included: (a) Shanghai Huangpu District, a developed region with commercial characteristics; (b) Juye County of Shandong Province, a developed region with agriculture as its primary industry; (c) Changdao County of Shandong Province, a developed region with fishing as its primary
industry; (d) Dongxiang County of Gansu Province, an economically and socially depressed region with minorities constituting the majority of the population; (e) Zhangjiachuan County of Gansu Province, a backward region with animal husbandry as its primary industry; and (f) Jinzhai County of Anhui Province (a backward region with agriculture as its primary industry).

2. Second, it used qualitative analysis to discover the similarities and differences in the districts where there existed vocational education and those where there did not. For carrying out the qualitative analysis, the following were put into practice in order:

(a) Emphasis was placed on the interdisciplinary study, such as organically connect manpower, economy, and education, in order to give prominence to interdisciplinary characteristic of research.

(b) Some objects were selected like different kinds of schools and enterprise employees. Then the inner connections and uncertain factors between vocational education and economic development were explored through investigations and case studies.

(c) When collecting data, triangular corroboration analysis, an effective method for qualitative research, was used. Data was gathered by various sources or
methods, and the coherence of data and truth for evaluating data and accuracy of outcome were strictly kept confidential.

3. Third, analysis figured out the laws and methods of change and development and summarized the development of local vocational education, cultural level and manpower educational level since 1978, the beginning of the reform and open up of China. On this basis, this study investigated correlation among education, the economy, and population, in order to determine the inter-restrictions among them. Finally, suggestions were constructively forward on vocational educational development, economic development programs, and economic growth patterns.

Description, Analysis and Interpretation of Results

China boasts a vast territory with distinct differences among districts. Such great regional diversity has given rise to different styles and patterns among different districts, as far as the developmental rules of vocational education and its relation with the economic development are concerned.

Figure 4.1 deployed the national distribution of vocational education. Generally speaking, the economy in the east and the coastal areas of China developed better than in
the west and remote areas of China. As shown in figure 4.1, the coastal areas have more vocational schools than the west and the remote ones. This study investigated the relationship between vocational education and the economic and social development of locations.

According to the different degrees of social and economic development in China, two types of areas can be distinguished; they are developed regions and backward ones. The features of the developed areas are a well developed economy, a high level of development, man-power resources, a large number of colleges, universities and academic research institutions, and a comparatively perfect system of vocational education.

These advantages make possible the synchronized development of industry, education and research. For these areas, knowledge should carry out a major function in promoting and guiding the development of industrial economy, and transforming the traditional agriculture into a modern technical industry, i.e. bio-chemical medicine, life-sciences, network information and so forth.

Some regions such as Juye and Changdao of Shandong Province became newly prosperous with the execution of the reform and opening-up policy. Shandong is a coastal province. Juye is located in the south of Shandong Province, with a population of around
910,000; Changdao is located on an island of Shandong Province, with a population of 46,000. It has industrial foundations of ordinary level. Therefore, as a newly developed region, it is somewhat weak and cannot withstand the fierce competition brought about by entering the WTO. In these areas, there are limited vocational education systems and certain research facilities, but the foundations are not as solid as those of Shanghai. Therefore, the market economy must be used to transform the traditional industries in such areas. To the areas with better conditions, the industries related to human resource, such as software industry, consultation industry, medicine, communication, etc. can be chosen for development, and used to adjust the original industrial structure vigorously.

Some of backward regions, especially old and barren areas, such as Zhangjiachuan and Dongxiang of Gansu Province, do not have solid economic foundations. Gansu is a west province. Dongxiang is located in the central part of Gansu Province, with a population of 260,000; Zhangjiachuan is located in the southeast of Gansu Province, with a population of 300,000. As for these areas, the infrastructure facilities must be strengthened and the strategy of “laying a good foundation and progressing with leaps and bounds” should be used. The development of information, Internet, traffic and natural resources should be quickened. In the long run, in these areas, the most important priority is to improve the human quality of life. As long as human resource is developed,
knowledge economy will develop subsequently. Knowledge should be put into full use in order to promote local economic development. At present, these areas should learn lessons and experiences from the town and township enterprises of the coastal areas and properly develop the industries employing the local natural resources.

Meanwhile, with agricultural development, the Internet information should be employed to gain the latest technologic knowledge for the purpose of inspiring the development of high-quality, efficient agriculture and side industries. The agricultural and side industrial productions with their natural advantages should be rapidly introduced all over the country and even abroad. At the same time, this would promote the investment in education and the improvement of human quality in these areas. Vocational education should be developed, as knowledge can lead the regional economy to further development. The natural resources in these areas should be protected while being developed. The tourism of natural scenery and human resources can be developed first by means of inter-regional cooperation and joint development, which would lead to the development of economy, the cultivation of regional intellectuals and the promotion of the qualities of the human resources.
A region investigated — Xian, Gansu Province.

Figure 4.1  Map of vocational education distribution in China.

Source: Data collecting & summarizing
Due to the imbalance of regional economy, the dimension, speed and the efficiency with which vocational education develops are also different with a sharp contrast in the quality of the human resources. A regional comparative study of the economic development and vocational education would help to find the main reasons that lead to the differences and to learn from the developed areas as to why they can have successful vocational education. In this way, vocational education in the developing and backward areas can be promoted, and at the same time, the local economy will further develop.

Vocational education and social economic development in the developed regions

Case study and interviews: Shanghai Huangpu District

As early as the Ming Dynasty (1368-1644), Shanghai was already prosperous. Now, it serves as the biggest national and international trade center in China. The input and output capacity of the harbor reaches more than one hundred million tons. The exporting ability accounts for more than one sixth of the whole country. Both industrial production and trade rank the first all over the country. It is the biggest comprehensive industrial base in China.

In recent years, the economic development in Shanghai has the tendency to be
largely transformed. The high technology industries, which appear and develop quickly, have been changing industrial structure and have directly affected the traditional manufacture and crafts industries. Laborers are required to be equipped with new technologies. The region, Huangpu, located in the center of Shanghai, and considered to be able to represent the whole level of Shanghai, was chosen for one of the subjects of this study. This region is a prosperous commercial concentration area. One of the vocational schools in Huangpu was chosen for the case study. Through research, it is clear to see immediately what kind of role vocational schools in Shanghai are playing in the context of social and economic great change and the influence vocational education has upon the economic development of Shanghai. Huangpu is the most prosperous commercial area in Shanghai, and it is also a national famous trade market and shopping center. There are 11,372 shops and more than 1,000 trade companies, and this region is the place with the greatest number of financial institutes in Shanghai. Altogether, it has 116, with many foreign capital banks, such as the Shanghai branches of the British Huifeng, the American Citibank and the French Eastern Huili Bank, and Huaqiao Bank and Donjia, with capital from foreign Chinese.

During the period of investigation in Shanghai, Mr. Huang Shitong, an official in the vocational education office of Huangpu was interviewed. He was asked, "How do you
think vocational education affects the economic development in your region? Is that influence negative or positive? Is that influence great enough?” He did not give me a direct answer. He took out a red book from the data cabinet and then answered me by quoting a paragraph from a summary report, which read: “The secondary vocational schools have provided many qualified laborers for different professions in Shanghai. According to a survey, since 1949, in Shanghai, technical schools have educated about 400,000 skilled workers, accounting for 25% of the skilled workers in Shanghai. Secondary vocational schools have cultivated about 300,000 skilled workers and management personnel. Vocational schools, in ten years since the reform and opening-up in 1978, have offered 120,000 qualified laborers, and these people, possessing both general knowledge and vocational theories and experience in vocational education. At present, they are mainly work in state-run industries and enterprises and governmental offices, and they contribute a lot to the economic development of Shanghai.”

When I paid a visit to Shanghai Huangpu Commercial Vocational School, Principal Zhang received me. I asked her, “What do you think is the essence of vocational education reform?” She answered me without any hesitation, “It is to introduce the mechanism of competition.” Dean Lee of the Educational Department told me, “In the past, due to the out-of-date majors and the stagnancy for more than ten years, it was
common that we didn’t have enough students to register for class. In 1989, there were less than 200 students. After reforming the enrollment policy, we personally visited the enterprises and the big or famous shops, and then we gained great support from the commercial departments. At the time of economic recession, we opened three commercial management classes with full enrollment, and thus saved ourselves difficulties.” This school is one of the schools that is identified as an important vocational school of the city. The majors have been established that are oriented towards the service industry and the needs of the new economic development.

Shanghai Huangpu Commercial Vocational School has been developing on the basis of the special economic prosperity. The school was set up in 1985, and it is special for cultivating moderate commercial management. It is guided by the principle of “serving the commerce, educating people” and is featured by these characteristics of vocational education.

1. To show that vocational education possesses commercial characteristics.

   Educated specially, students can go directly to the commercial system after graduation, and make contributions.

2. To show that vocational education is flexible.
According to the change of the regional and talent structure, it offers students different professions. Owing to students’ good qualities, the graduates from this always have more chance for job employment.

3. To show that vocational education has the characteristic of openness.

The school often communicates with society and requires students to be capable of speaking standard Chinese, commercial English and even the language of the deaf person. The trades also play a part in running the school, and the curriculum is set according to social needs.

4. The educational reform

Following the principles that education should serve the economic construction and commerce and that major curriculum should be practical, the school carries out the educational reform, cancels the theoretical part and reinforces the practical training.

For the courses of foreign languages, commercial English is attached greater importance; and meanwhile, students must master how to use computers, calligraphy and driving, and also must endure physical training.

5. The school’s managing mechanism

The principals take charge on the whole, different parts levels have their own duties
and the school is managed democratically. Next, no excessive teachers are allowed in the school. The whole amount of salaries is contracted, and there is gap between different payment levels in order to reflect the policy of getting payment according to the work performance. The salary will not change according to the increasing or decreasing of the amount of the staff. In this way, Working efficiency will be improved and the teachers’ treatment will be better. Third, whether teachers are hired or not will be decided by their real abilities. The person who hires them is required to supervise them.

The development of the social economy greatly inspires the development of vocational education. In less than ten years, the school collected funds itself and then built teaching buildings. The school has been extended from twenty-four classes to one hundred. The teaching facilities and studying conditions have been apparently improved. For years, the school has always probed the developing rules of vocational education and adopted new ways of combining producing and studying.

Producing can feed education; education can promote producing. The main majors have factories for practice, where students can put what they have learned into practice through real work. At the same time, these factories can provide funds for school to
promote educational conditions. In this way, the school is in a beneficial circle.

To combine producing and studying means running schools by economical units. In other words, vocational schools and enterprises make joint efforts to run schools. The curriculum is set according to the needs of the enterprises. Students, after graduation, will be directly distributed to the enterprises. For example, Hai‘r, a famous enterprise located in Qingdao City, Shandong Province, was established in 1980s, originating from a very small street enterprise, producing domestic appliances. In less than twenty years, it jumped into the list of the world’s top 500 enterprises. From its development, it can be learned that the enterprise absorbs the foreign investment, and at the same time, it seeks cooperation with vocational schools, in order to carry out the execution and research of technologies and management.

Most of the workers in Hai‘r came from the country. After a period of management study and technological training, they became well qualified. Hai‘r created a legend designing and making a new model with seventeen hours. The profits of the enterprise rose by multiplication. In several years, the products of Hai‘r have entered the foreign market.

The developing characteristics of vocational education in Shanghai were analyzed.
From a historical point of view, vocational education in Shanghai is always in the leading position all over the country. Concerning the measures of educational reform, the traditional planning model should be abandoned first. According to the requirements of the market demand and supply, the new system of vocational education has been established. It has the following characteristics:

1. **Diversity in running the school**

   After the execution of the reform and opening-up policy, vocational education institutions in Shanghai changed their traditional style of running schools by themselves into the open style of cooperating with others. These institutions try to meet the needs of the market. They fully mobilize every department, enterprise and civilian force to run schools, and the phenomenon that all the society is active in running schools comes into being.

2. **Diversity in fund raising**

   The resources mainly include the following: funds given by the local finance, funds gained by the advocating units, donations from the society, funds from the foreign countries, and the output from the industries run by the school.

3. **Meet the needs of change in the market’s supply and demand**

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The economy does not develop equally in different regions in Shanghai, and local resources and management are diversified. Therefore, vocational education aiming at the regional development reveals regional characteristics. In order to meet the change of the local needs of the labor resources, rapid and even advanced regulations are made in time on the aspects of student enrollment, major setting and educational mode.

4. Students' distribution depends on school's recommendation

In the educational system, vocational education is the first to enter into the market. After graduation, most students take up jobs either through the school's recommendation to the enterprises or through the talent and labor market, where students can make choices freely. Vocational schools open the door of the labor market by introducing the excellent graduates.

As shown in Table 4.1, data representing Shanghai Huangpu District for 2000-2002 includes local population, yearly graduates from vocational education schools, Gross Domestic Product (GDP), and National Income (NI). (Shanghai Huangpu Government, 2002).

As compared with the national per capital GDP of $970 (Bureau of Statistics P.R.C., 2002), Shanghai Huangpu District shows its economic status of GDP $19,417. It is
actually one of the most prosperous areas in China. In this prosperous area, it shows a ratio of yearly graduates from vocational education school out of local population for an average of 3.195%.

Table 4.1

<table>
<thead>
<tr>
<th></th>
<th>Local population</th>
<th>Graduates from vocational school</th>
<th>GDP ($,1000)</th>
<th>Per capita GDP ($)</th>
<th>Graduate (%)(^a)</th>
<th>Per capita NI ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>603,500</td>
<td>18,450</td>
<td>10,987,804</td>
<td>18,206</td>
<td>3.057</td>
<td>2,881</td>
</tr>
<tr>
<td>2001</td>
<td>614,900</td>
<td>19,850</td>
<td>11,987,808</td>
<td>19,495</td>
<td>3.288</td>
<td>3,002</td>
</tr>
<tr>
<td>2002</td>
<td>632,000</td>
<td>20,860</td>
<td>12,987,804</td>
<td>20,550</td>
<td>3.301</td>
<td>3,074</td>
</tr>
<tr>
<td>Average</td>
<td>616,800</td>
<td>19,720</td>
<td>11,987,804</td>
<td>19,417</td>
<td>3.195</td>
<td>2,986</td>
</tr>
</tbody>
</table>

Note. From Shanghai Huangpu government. \(^a\) the ratio showing yearly graduates from vocational education school out of local population.

Case study and interviews: Juye County.

The economic development in the developed regions is not balanced, and vocational education in these regions possesses differences from each other. Because vocational
education and economic development have certain similarities, both of them share some characteristics. The reasons Sandong Juye was chosen as a region to investigate are described below.

1. Geographically speaking, the Shandong province is located in the eastern coastal part of China, along Bo Sea and Huang Sea. The geographical conditions are helpful to develop economy towards the outside world.

2. Since the reform and opening-up, the economy has been developing very fast. Especially during those years, it developed foreign trade depending upon its advantageous natural environment. In this way, the economic development has been inspired, and so has the development of vocational education.

3. Under the inspiration of economy, vocational education stepped forward. It has the following characteristics: taking the track of combining studying and producing; taking the track of developing on the basis of special advantages; taking the track of interior development.

    Vocational education development must be equipped with the characteristics of the local social economy. The main economy in Juye is agriculture. Wheat, bean and corn are the main agricultural crops, and cotton and vegetable are the main economic ones. This
county is one of the most important cotton producing regions in Shandong Province. The village net of the farmland has been almost completely realized all over the county. There are almost 100,000 mu of fruit cultivating land, which produces more than 3,500 tons.

Since 1949, Juye has gradually built up some state-run factories producing mainly wine, flour, cotton yarn, and small-sized farming machines. Although these enterprises have enjoyed an amount of certain development, the scope of economic activities the people in the county has mostly been limited to agriculture.

The director of the Education Bureau of Juye pointed out in the interview that vocational education in this county recovered and developed after the year 1980. In 1992, vocational education center was established. It presented such courses as the maintenance of the agricultural machines, the cultivation of the agricultural crops, anti-insect of the cotton, the cultivation of the vegetables in the plastic tent, and the graft of the fruit trees. The setting of these courses was intended to be suited for the local characteristics of that region. Agriculture plays an important role in the economy. Altogether, more than 2,000 agricultural technicians graduated. Since 1998, in Juye county, the managing type of family as a working unit has gradually changed into collective institution. And technological centers have been established. There appeared to be a joint managed institution of producing special agricultural products. At the same
time, the way of managing farmland also changed from depending heavily on toil and skilled labors to relying on technical farming machines. Whatever is cultivated, wheat or cotton, the laborers are required to have received training of a high vocational education.

The graduates of vocational education have become the most important participators who can cultivate and manage, and they have knowledge of techniques, management, and marketing. Under their efforts, agriculture of the whole county became prosperous.

Economic development in turn accelerated the development of vocational education.

Director Jiang Fugui further pointed out that after China entered into the WTO and Chinese agriculture entered into the international market, the mechanism of the market competition was introduced into China. At that time, farmers were no longer contented with self-supporting economy, and they needed to develop the economy towards the American mode of plantation. They are pursuing high production, high efficiency and agricultural economy with good qualities, thus vocational education in this county is being further developed.

Then a visit was paid to the director Qian of Juye vocational education center and discussed with him how to solve the common problem of funds in vocational education. Director Qian stated that all such branches in Juye as banks, tax collecting department,
the department of city construction, farmland managing department should take some beneficial measures and active part to encourage and help the school-run industries and the construction of education economy program in order to accelerate the self-investment of the education. The government branch should supervise to ensure the proper employment of the educational funds.

From the perspectives of the measure of vocational education reform and the requirements of the market law of supply and demand, the developing speed of vocational education in Juye surpasses economic development. And it breaks the planning mode of traditional vocational education. The new system of vocational education has been set up. Depending upon the development of vocational education, economic and social development is inspired and shows the following characteristics:

1. The local government develops the system of vocational education, which sees agriculture as the main pillar. This inspires the development of the scientific and mechanical farming, which can guarantee the consumption of the vegetables all year around and provide a great number of agricultural products for the surrounding cities. Therefore, markets become active and the income rises.

2. Vocational schools set up such courses as the maintenance and use of the agricultural
machines. Other courses include the management of the farmland, the cultivation of the good seeds and the planting of cotton. According to the season, short-period education is dominant, especially concerning the cultivation of the vegetable. Many new species are introduced from the foreign country into the center for plastic tent vegetables.

3. In Juye, the industry is undeveloped, and the style of the family working unit is dominant in its rural economy. Many people are willing to accept short-period technical education programs for making quick money.

4. Every year, in Juye, there is an examination of the technicians, and the people who can pass, get certificates. Without such certificates, people cannot work as technicians. When the grassroots see that the graduates have some merit and can make great achievements, they all come to support vocational education and encourage their children to go to vocational schools. In this way, the schools will have more students. In addition, having the certificate as a technician becomes an indispensable criterion for choosing a spouse.

As shown in Table 4.2, data representing Shandong Juye County for 2000-2002 include local population, yearly graduate from vocational education schools, Gross Domestic Product (GDP), and National Income (NI). Some Statistics of Shandong Juye
County from 2000 to 2002

Table 4.2
Statistics of Shandong Juye District from 2000 to 2002

<table>
<thead>
<tr>
<th>Year</th>
<th>Local population</th>
<th>Graduates from vocational school</th>
<th>GDP ($,1000)</th>
<th>Per capita GDP ($)</th>
<th>Graduate (%)</th>
<th>Per capita NI ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>900,000</td>
<td>15,215</td>
<td>2,121,951</td>
<td>2,358</td>
<td>1.691</td>
<td>895</td>
</tr>
<tr>
<td>2001</td>
<td>917,000</td>
<td>15,317</td>
<td>2,243,902</td>
<td>2,447</td>
<td>1.670</td>
<td>991</td>
</tr>
<tr>
<td>2002</td>
<td>915,000</td>
<td>15,565</td>
<td>2,357,317</td>
<td>2,577</td>
<td>1.701</td>
<td>1,108</td>
</tr>
<tr>
<td>Average</td>
<td>910,667</td>
<td>15,366</td>
<td>2,241,056</td>
<td>2,460</td>
<td>1.687</td>
<td>998</td>
</tr>
</tbody>
</table>

*Note. From Shandong Juye government.  
*a the ratio showing yearly graduates from vocational education school out of local population.*

As compared with the national per capital GDP of $970 (Bureau of Statistics P.R.C., 2002), Shandong Juye County shows, its economic status of per capital GDP $2,460. It is actually one of the prosperous areas in China. In this prosperous area, it shows a ratio of yearly graduates from vocational education school out of local population for an average of 1.687%.
Case study and interviews: Changdao County

Changdao is located on an island. Fishing is its main source of economy. In all industrial circles, water farming accounts for a large proportion of income and industries and township enterprises rank second. Since the reform and opening-up, the economy of this county has been developing very quickly. Every year, the economic development rate surpasses 2%. In Changdao, the aquatic products industry is the leading one, which inspires the rapid development of other township industries. At present, four incorporations have been established: manufacture, ship industry, textile and plastics. An island industrial base of great dimension has come into being. Workers from the outside are more than 30,000. Although it is an island county, the flow of the people coming to find jobs never stops. For this, the county put forward the educational requirements for the enrollment of the workers who come from the other places. Every enterprise has its own clear principle: every new worker must be educated before taking up jobs. This principle naturally plays an important role in promoting vocational education.

The Aquatic Products Vocational School is located in the faraway part of the harbor surrounded by waters and mountains. During the interview, Vice Principal, Wu, led us to visit the manufacturer of the fishing equipments in the school-run aquatic equipment company. The products made here are partly provided to the domestic market and are
partly exported to the foreign countries. They have been selling well. The management level of the factory, from director of the whole factory to the dean of every department, all graduated from this school. Some of the workers are selected from the people who come from the other places; some are the students who are about to graduate. I asked Vice Principal Wu how they succeed in running the factory. He said, “The development of the vocational school must be closely related to that of the regional economy, and these two elements should be balanced. In this way, vocational education can really be developed stably and consistently.

From analyzing the measures of vocational education in Changdao and from the perspective of the requirements of the regular patterns of the market supply and demand, it was found that the rapid development of vocational education in Changdao has caused the rapid development of the economy. The development of the economy in turn requires more talents with knowledge and techniques. New types of vocational educational programs need to be set up. The development of vocational education inspires the social and economic development. It has the following characteristics:

1. As for the foundation of running the school, the main aim is to fit the requirements for development of the aquatic products industry of the sea island. As far as the direction
for running the school, the principles of considering the practical conditions of the
county and meeting the requirements of the development of the aquatic industry are
insisted upon. The needs of the youthful growth and of the human resources markets
should also be taken into consideration. In the actual process of running the school,
educational profits, economic profits and social profits are applied consistently as a
standard to evaluate whether the school is a success or a failure.

2. Following the principle of “running the industry on the basis of the school and the
industry’s feeding the school”, the school creates its own developing characteristics.

By their own professional advantages, the vocational school supports the school-run
industries in great numbers, and the industry feeds the school. The efforts of realizing
“running the industry professionally and then developing the enterprise into the
industry” serve education and local industries. The school selected a group of teachers
who are good at marketing and management and possess some techniques, and at the
same time, hired persons who know how to produce, market, and have some
knowledge about teaching. This is done with the help of the same related enterprises,
especially the cooperative units by using loans, considering aquatic products
cultivation, and fishing and navigating transport. The fishing equipments
manufacturing factory and chemical resin factory were set up one by one in this school.

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Teachers and students can take part in the producing process of the enterprises at any time. Therefore, the factories are both producing units and places for putting theory into the practice. In this way, producing, teaching, working and studying are closely related to each other. On the other hand, the school-run enterprises provide more job opportunities for the students. The students are considered first for job application. Since the founding of the school, about one hundred good students have been distributed to the school-run enterprises. This greatly promotes the educational qualities.

3. The fishing techniques of Japan and South Korea were introduced, and so was aquatic products manufacturing. With the development of the majors in the vocational school, enlarged enterprises, and funds this school gradually is going in the direction of international development. It is constantly enhancing the competitive abilities of the products. The school-run enterprises greatly serve the development of the school in term of providing funds. Every year, the income of the school is enormous, coming mainly from students’ manufacturing practices and the profits produced by the enterprises.

4. When the school was founded, the local economy became stronger and the local
citizens became much wealthier mainly by profession-guided production and enterprises’ inspiration on the whole industry. A large group of talents are sent to every local enterprise, and great deals of information are also delivered. Therefore, the development of each local enterprise is accelerated. Many industries develop from nothing to something, from the weak to the strong. Fishing equipment companies accept many trade processing tasks from both home and abroad.

The developing dimension extends from the school to the whole county, from educational system to the township enterprises, from Changdao to the surrounding counties. Now it has become a modest joint enterprise with more than twenty processing branches in ten surrounding counties. During the visit and interview, a local fish market was visited. On both sides of the road, one stand is next to the other and these stands, some wholesaling and others retailing, extend almost one half mile. Some customers take fish back home and others cook fish immediately in order to keep it as fresh as possible. The person who is in charge of the market told the researcher that each seller here has to experience vocational training, and only the person with a certificate can register for selling. He also said, “The development of vocational education inspires economic and social prosperity.” Changdao can be taken as a typical example of the rapid development of vocational education being consistent
with that of the economy.

As shown in Table 4.3, data representing Shandong Changdao County for 2000-2002 include local population, yearly graduate from vocational education schools, Gross Domestic Product (GDP), and National Income (NI).

### Table 4.3

Statistics of Shandong Changdao County from 2000 to 2002

<table>
<thead>
<tr>
<th>Year</th>
<th>Local population</th>
<th>Graduates from vocational school</th>
<th>GDP ($,1000)</th>
<th>Per capita GDP ($)</th>
<th>Graduate (%)a</th>
<th>Per capita NI ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>45,700</td>
<td>1,244</td>
<td>2,735</td>
<td>5,615</td>
<td>2.722</td>
<td>985</td>
</tr>
<tr>
<td>2001</td>
<td>45,600</td>
<td>1,147</td>
<td>2,944</td>
<td>6,245</td>
<td>2.515</td>
<td>1062</td>
</tr>
<tr>
<td>2002</td>
<td>47,200</td>
<td>1,187</td>
<td>3,061</td>
<td>6,985</td>
<td>2.515</td>
<td>1152</td>
</tr>
<tr>
<td>Average</td>
<td>46.1700</td>
<td>1,193</td>
<td>2,913</td>
<td>6,282</td>
<td>2.584</td>
<td>1,067</td>
</tr>
</tbody>
</table>

*Note. From Shandong Changdao government. a the ratio showing yearly graduates from vocational education school out of local population.*

As compared with the national per capital GDP of $970 (Bureau of Statistics P.R.C., 2002), Shandong Changdao County shows its economic status of per capital GDP $2,913. It is actually one of the most prosperous areas in China. In this prosperous area, it
shows a ratio of yearly graduates from vocational education school out of local
population for an average of 2.584%.

Vocational Education and Social economic development in the backward regions

Since the reform and opening-up, China's social economic development has been
rapidly increased. But the local economic gap has become greater. Due to historical
reasons, the Northwest regions have been the areas needing financial assistance.

According to the statistics, there are 300 counties financially assisted by the central
government and 363 counties financially assisted by the provincial government. These
account for one third of China's counties and one fourth of the total population. The
reasons for this phenomenon are described as follows:

1. Geographical conditions

Geographical conditions are vital to the existence of certain production modes in
society. The natural conditions exert great influence on the development of the local
economy.

2. Poorly-educated labor

Due to the poor quality of the labor, people living in the backward areas are quite
conservative and traditional in terms of economic life, cultural education, national psychology, points of view and the language. Thus, talent exchange, information development and modern measures of education cannot be put into practice. At the same time, it is hard for education and culture of the developed regions to penetrate these regions. If the labor’s quality cannot be improved, and the technical training cannot be carried out, vocational education has little value. The gap between educational levels cannot be solved during a short period of time.

3. **If a vocational school is run in a traditional manner, it absolutely cannot help the economic development as it should.**

   According to the results of the survey, the gap between backward and developed regions derives not only from the economy, but also from the comprehensive development of the whole society. Of course, it also lies in developing the level of education.

4. **The development of vocational education in the East and the West are getting more and more distant from each other.**

   Although the government provides a large number of funds and materials to help the poor regions in order to decrease such an economic gap, because of the rapid
economic development and more investments on education in the East coastal regions, the economic and vocational education gap between the East and the West will become bigger and bigger. The main obstacle to the economic development of the West is backwardness of the educational level. Therefore, this study chose three poor regions to carry out the case studies, distributed respectively in the Gansu province and Anhui province.

Case study and interviews: Dongxiang County

Dongxiang, an autonomous county, is located in the central part of Gansu province, where there is dryness on the plateau. There are altogether 380,800 mu of arable farmland, 190,000 mu of forestland and 1,280,000 mu of grand land. Agriculture is the primarily industry in Dongixiang, and animal husbandry and planting are dominant in agriculture. The production level is relatively low, and people are heavily dependent on the climate. The ability to averting-natural catastrophe is quite poor, especially drought, which has become a main obstacle to the development of the regional economy. In 1983, Dongxiang was listed as one of the poorest counties and in need of constant assistance by the central government.
The Dongxiang minority is a national unit, formed in the middle of the 14th century, mainly including Central-Asian race of Semu. In this region, several races are mixed together, Muslim, Mongolian, Semu, Han and Zang. The mixture came into being during the period from the end of Yuan Dynasty to the beginning of Qing Dynasty. From the 1980s to the 1990s, the population grew rapidly. In 1995, it reached 243,100. In the structure of the population, 97.3% of the people work in the traditional industries. Only a few people work in the high technique industry. Farming is the main industry.

Transportation is rather backward in Dongxiang. Old long-distance buses and carriages drawn by donkeys are major modes of transportation tools there. It is quite dry, and the air is full of dust. There was only one interview in the county at the local education bureau. Both the director and the vice director had gone to the country to help education.

Section chief Jin, on duty at that time, when asked, “What kind of new measures did the local government taken concerning the reform of vocational education?” replied, “People here don’t have enough to eat, and we don’t have money to run vocational education at all.” IN response to, “Vocational education can lead to wealth. What was local people’s reaction to the conditions of the regional education?”, he said, “The
poverty of Dongxiang is widely known. Dongxiang has almost spent all limited money in running schools. Now, there are still some villages without schools. Very young children are unable to climb the hill and walk a long way in order to go to the school located in the nearby villages. Therefore, they all stay at home.” When asked the main difficulty in running the school, he answered, “The funds are not sufficient.” The shortage of funds seriously affects the fundamental education, not to mention the development of vocational education. Section head Jin further pointed out that vocational education in Dongxiang is very backward, and there is a great gap compared with other regions. Since 1949, there have been only such short-period programs such as medical education for doctors and nurses, agricultural machines, and sewing and agricultural secondary schools. At the end of 1980, the first vocational school was set up. Due to the shortage of students, it ended.

Adult education has not been practiced because of the shortage of funds, teachers and other factors. There are many illiterate persons, but the work of getting rid of illiteracy has stopped. There are more factors leading to the backwardness of local vocational education. Such factors limit the development of vocational education because of economic poverty and unreasonable industry structure. A great number of laborers have no chance of receiving vocational education to move to high technology industry. That
also hinders the development of the local vocational education. It is quite difficult to develop vocational education in the Dongxiang minority.

The main factors that limit the development of vocational education in Dongxiang minority are summarized as follows:

1. **The influence of history and geography on vocational education**

   For centuries, the culture of education in Dongxiang has been quite backward, except for the Apu who do a little reading and work in Muslim temples. Ordinary people don’t have the chance to be educated. This leads to the tradition of people not hungering for experiences and having no respect for education in Dongxiang. The founding of the education institutions was encouraged and developed by the Dongxiang government. Some of people sent their children to school purely as a kind of reaction to respond the call of the government and as a kind of task ordered and required by the government. It has not become an intuitive action. Due to the geographic conditions, villagers live sparsely. It generally will take half a day walk for people to get together. In order for the children to go to school, at least one school must be set up in every village. In some schools, there are only a few students. In this respect, undoubtedly the expense rises.
2. The influence of educational funds on vocational education

From the perspective of financial input, it can be seen that the educational investment accounts for a big percentage of the whole financial expenses in Dongxiang. Both the local government and ordinary people have made great efforts to develop the education, but education cannot be practiced only by an enthusiast wish for it. Financial and material input is a necessity. However, the barren land and backward production can only offer so much fortune to the ordinary people. Local material conditions are barely able to feed dozens out of thousands of people. It now has to support 250,000 people. In order to develop education, Donxiang has spent almost all of its money; therefore, it cannot afford to offer formal vocational education. It is impossible to expect that the short-period vocational training programs can perform as the formal vocational education system does. It is also very hard to give the local labor force stable and consistent education and training.

3. The influence of social economy upon vocational education

In Dongxiang, agriculture is quite backward, and industry is even more backward. The technological contents are very small in both agricultural and industrial production. Ordinary people can only have the feeling that only people with educations can become cadre. They don’t know what kind of direct benefits can
be brought to them by science and technology. Since the reform and opening-up, some illiterate people have made fortunes by either going out to work or by doing fraudulent buying and selling. This misleads ordinary people to think that even if they don’t go to school, they can also become rich. Although the government emphasizes again and again the importance of education, in Dongxiang, even some of the cadres are unable to read newspapers. How can they persuade and encourage ordinary people to participate in education?

On the way back, I visited a Muslim temple and a local famous old Apu. When asked his opinion on the local education, he answered, “I am, as an Apu, very worried that once I die, there will be no heir to my position. If that happens, maybe they will invite one from the outside.” His words reveal that local education is quite backward, not to mention vocational education.

As shown in Table 4.4, data representing Gansu Dongxiang County for 2000-2002 includes local population, yearly graduates from vocational education schools, Gross Domestic Product (GDP), and National Income (NI).

As compared with the national per capital GDP of $970 (Bureau of Statistics P.R.C., 2002), Gansu Dongxiang County shows its economic status of per capital GDP $ 94. It is
actually one of the most backward areas in China. In this backward area, it shows a ratio of yearly graduates from vocational education school out of local population for an average of 0.05%.

Table 4.4
Statistics of Gansu Dongxiang County from 2000 to 2002

<table>
<thead>
<tr>
<th>Year</th>
<th>Local population</th>
<th>Graduates from vocational school</th>
<th>GDP ($,1000)</th>
<th>Per capita GDP (US)</th>
<th>Graduate (%) a</th>
<th>Per capita NI (US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>260,000</td>
<td>120</td>
<td>23.170</td>
<td>89</td>
<td>0.046</td>
<td>98</td>
</tr>
<tr>
<td>2001</td>
<td>261,000</td>
<td>130</td>
<td>24,512</td>
<td>94</td>
<td>0.050</td>
<td>98</td>
</tr>
<tr>
<td>2002</td>
<td>261,400</td>
<td>145</td>
<td>25,609</td>
<td>98</td>
<td>0.055</td>
<td>100</td>
</tr>
<tr>
<td>Average</td>
<td>260,800</td>
<td>132</td>
<td>24,430</td>
<td>94</td>
<td>0.050</td>
<td>99</td>
</tr>
</tbody>
</table>

Note. From Gansu Dongxiang government. a the ratio showing yearly graduates from vocational education school out of local population.

Case studies and interviews: Zhangjiachuan County

Zhangjiachuan is located in the Southeast of Gansu Province, to the Northeast of Tianshui city. The total area of the county is 1311.7 mu, with the population of more than
300,000. Farming and animal husbandry are the dominant industries.

There are some important points regarding natural resources and economic development here. Zhangjiachuan belongs to the area of the plateau, hill and ravine, located near the middle part of the Yellow River. Height above sea level is high, and the transportation lags behind. In 1985, Zhangjiachuan was listed as one of the poor counties needing assistance by the central government. The whole economic level is low. The main commerce is the large Longshan fur wholesaling market, which is formed on the basis of the collection, selling, and manufacture of fur from goat, rabbit and fox. In the whole county, there are more than ten thousand people engaged in the selling and manufacturing of fur. The Longshan fur market attracts buyers from more than ten provinces all over the country. Every year, three million pieces of fur enter into the market, and the trading amount reaches to about 1.75 million US dollars. However, the fur trade doesn’t change local poverty and backwardness. The slow development of the economy is the most important problem in this county.

I visited Mr. Wang, a teacher, a veterinary surgeon, and asked him some questions on vocational education. He pointed out that on December 24th, 1985, under the approval of the Gansu provincial government, the Zhangjiachuan Teacher Education School was
established as a middling vocational school. This school originated from a teacher education school. It was the first time in Zhangjiachuan's history to establish such a teacher education school. The main reason why such a school was established was that there weren't enough qualified teachers in the region. Several majors lacked teachers, and it was impossible to attract such teachers from the outside. The reality proved that it was necessary to establish such a school.

In the interview, a clerk, Mr. Lin, working in the education bureau, said that vocational education in Zhangjiachuan is still in the beginning stage. In 1993, a class of animal husbandry was set up, and the efficiency was very good. Afterwards, even though there were not enough students, the class was cancelled. In 1994, a center of vocational education was established. But vocational experience in its true form has not been realized. It turned out to be a teacher education school. Totally, 2,460 students accepted the training. In this county, although all the towns and more than 80% of the villages have set up culture and technique schools for farmers, and 70% of the farmers have experienced education on practical techniques, it is still very difficult to develop vocational education in Zhangjiachuan County.

The main factors affecting the development of vocational education in Zhangjiachuan County are described as follows.
1. **There are insufficient investments in education.**

   Because the policy of the central government is that the local government is financially responsible for itself, the educational investment is decreasing year by year. At the same time, for the central government, the distribution of the educational funds is changed from lump mode to project mode. In this way, the shortage of funds becomes more and more obvious. From 1990 to 1995, this county government collected 1.17 million US dollars and established four standard schools. Obviously, this is far from the actual need because the whole county needs ten standard sample schools. In other words, the phenomenon of lacking funds is very serious.

2. **The conditions for developing education are poor**

   Influenced by history and geography, Zhangjiachuan County has a weak economic foundation. There are too many people on such barren lands. This becomes a big obstacle to both the whole development of this county’s economy and the improvement of ordinary people’s living standards.

3. **The low level of economic development hinders the development of vocational education.**

   A lot of areas in this county are in bad condition and poor in natural
resources, so the people’s educational level is low. The most fundamental job for this county is to cast off poverty and set out on the road to prosperity. In this case, the infrastructure for vocational education is usually lacking, and it is particularly difficult for it to make remarkable progress in developing vocational education.

4. The inadequacy of the vocational teaching staff hinders the development of vocational education.

Since the fiscal revenue is always in the red, the staff of this county’s government departments and state institutions usually cannot get their full pay on time, which undoubtedly undermines the stability of the teaching staff. Lots of teachers are anxious about making a living. Some experienced teachers attempt to transfer to other better-paying places.

I interviewed a furrier in the Longshan fur goods market. He claimed that as long as one could grasp such simple mathematic operations as addition, subtraction, multiplication and division, and a limited number of Chinese characters for keeping accounts, it was easy for anybody to do business after a bit of practice. He said there existed no need to attend any kind of training class. Such a claim reflects the very traditional and common negative attitude towards education, not to mention vocational
education. As a result, they are always confined to a small-scale economy and can never throw off the poverty in real terms.

As shown in Table 4.5, data representing Zhang Jiachuan county for 2000-2002 include local population, yearly graduates from vocational education schools, Gross Domestic Product (GDP), and National Income (NI).

**Table 4.5**
Statistics of Zhang Jiachuan from 2000 to 2002

<table>
<thead>
<tr>
<th></th>
<th>Local population</th>
<th>Graduates from vocational school</th>
<th>GDP ($, 1000)</th>
<th>Per capita GDP ($$)</th>
<th>Graduate (%)</th>
<th>Per capita NI ($$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>302,700</td>
<td>100</td>
<td>24,390</td>
<td>81</td>
<td>0.033</td>
<td>99</td>
</tr>
<tr>
<td>2001</td>
<td>306,200</td>
<td>110</td>
<td>32,805</td>
<td>107</td>
<td>0.036</td>
<td>109</td>
</tr>
<tr>
<td>2002</td>
<td>307,200</td>
<td>115</td>
<td>34,146</td>
<td>111</td>
<td>0.037</td>
<td>107</td>
</tr>
<tr>
<td>Average</td>
<td>305,400</td>
<td>108</td>
<td>30,447</td>
<td>100</td>
<td>0.035</td>
<td>105</td>
</tr>
</tbody>
</table>

*Note.* From Zhang Jiachuan the ratio showing yearly graduates from vocational education school out of local population

As compared with the national per capital GDP of $970 (Bureau of Statistics P.R.C., 2002), Zhang Jiachuan county shows its economic status of per capital GDP to be
$100. It is actually is one of the most backward areas in China. In this backward area, it shows a ratio of yearly graduates from vocational education school out of local population to be an average of 0.035%.

Case study and interviews: Jinzhai County

Jinzhai County is located in the middle of the Da Bieshan Mountain range, which straddles both Anhui Province and Henan Province. This county has particularly poor transport facilities, with only one road leading into the mountain. In 1953, in order to solve the problem of drinking water for several counties they constructed, at the foot of the mountain, the Meishan reservoir and inundated lots of fertile land. Then, a lot of villages of the Jinzhai County moved to the top of the mountain and lived mainly on small numbers of lands to plant cash crops. Its industries are all in the form of small-scale workshop-style handicraft ones, including the wine industry, food processing and bamboo processing. The county has a total population of 630,000 people. For a long time, it has been set as a state-level poverty county and has relied on the aid-the-poverty funds. Since the reforms and opening, the economic policies have grown flexible, and people's living standards accordingly have improved remarkably.

When I went to the bank and changed money, I had a casual talk with a bank teller,
Mrs. Li. She told me that social factors did exert great influence on education. Jinzhai County has always honored education, which does contribute a lot to people's awareness of giving priority to education. As a result, a lot of contemporary well-known scholars across the country are those whom the local fellows wish to learn from. Since the reforms and opening, people who have gotten rich in Jinzhai County are mostly the literate people, which promoted the local people to realize that without knowledge and skills, it is impossible to live a comfortable and wealthy life.

After a long and difficult journey, I arrived at the Jinzhai County government, and Mr. Zhang, the deputy head of county who is in charge of vocational education, said to me: 

“The local government has always put great emphasis on vocational education, trying our best to support it with funds and materials as much as possible. We have never cut back on the funds set aside specifically for its development, because that is a crime and should never be done.” Beyond question, the development of vocational education promotes the development of local society and economy. Its vocational education started in 1983 and after years of efforts, it has at present two exemplary vocational high schools at the provincial level, one secondary normal school and 22 middling vocational schools. The total enrollment is 4,320 students in middling vocational schools, and, as a whole, there are 64.3 middle-ling vocational students among every 10,000 people.
Jinzhai County's vocational education development has a growing momentum and, at the same time, it promotes the development of local society and economy. This is mainly demonstrated as follows:

1. **The government attaches great importance to education, seeing developing vocational education as an important means to develop the economy.**

   The director of the local Bureau of Education said that in the past, in addition to limited allocated fiscal funds, the county mainly relies on the sponsor of countrymen living abroad and domestic enterprises. In addition, cadres ranking above the section chief are required to help poor students and families.

2. **The county provides legal guarantees for the development of vocational education.**

   It has been judicially notarized that children of the right age must receive education. When parents block their children from doing so, the school is entitled to bring an accusation against them.

3. **The county strengthens vocational training of teaching staff in various ways.**

   The number of vocational teachers has increased from 80 in 1997 to 130 in 2002, and at the same time, teachers are transforming towards “dual types of teaching”, that is, a teacher acquires variety of skills.

4. **The county has always tried to improve study conditions.**
The county has built new teaching buildings, laboratory and dormitory buildings for both teachers and students. In addition, it has also purchased all kinds of laboratory equipment to aid education.

5. The county has always tried to help graduates obtain employment.

The government employs all the undergraduates, some of which work in the county and others who are sent out to other cities after careful planning. The local government signs contracts with employment departments of developed areas, as well as the graduates individually, so as to send them to work in those areas short of labor.

Mrs. Zhang, the deputy head of county, also pointed out that among all the graduates of vocational education, 258 people worked as cadres at the level of villages and town, 1800 people as the technological backbone of local enterprises, 388 people as technicians of farming and forestry and 285 as local example households in using technology. But, despite all the great improvements, vocational education still meets great difficulties in further development, as described below.

1. Inadequate investment in education hinders its development

Far different from general education, vocational education requires certain laboratory base and education aids and consequently large amounts of fund. But as poor as Jinzhai County is, it is more confined by funds in developing vocational
education than general education. The government can only allocate funds for normal expenditures of teaching and administration, and the school has to raise the rest of the needed money by itself. Therefore, lots of schools are faced with the problem of scanty funds, and some cannot even spare enough money to purchase the basic working appliances. Although they have made some improvement in terms of teaching buildings and aids, it is far from satisfactory to solve the existing problems.

2. Lack of enough vocational teachers

Due to the lack of vocational teachers, the school has to invite applications for teachers paid by the community to give lessons temporarily, which is bound to affect the quality of teaching. In order to solve the problem of teaching quality, some schools have to spend a lot of money to invite vocational teachers from other places, but this fails to solve the problem in the long run and does harm to the consistency of teaching at the same time. Consequently, a lot of specialties in great need cannot be offered, which, in the long run, affects the development of vocational education.

3. Traditional concepts persist

The universal entrance examination has developed into a means for families to “keep up with the Joneses”. The social status of those families, together with their relatives whose children are able to enter the university, is naturally heightened. In
these cases, people look down upon vocational education and are reluctant to accept
and invest in it. It is clear that the traditional concepts and values exert far greater
influence on vocational education than economic factors do.

On my way back, I paid a visit to Jiandian Vocational School, which was founded
in 1983. The enrollment of this school has increased more than double every year since
2000, and the supply of graduates always falls behind demand. Students have been
guaranteed a future job when they practice their fieldwork before graduation. As soon as
we began our talk, Mr. Li, the principal of the school, told the researcher proudly that the
county's famous chestnut production was a result of workers who graduated from this
school. Its yield is more than 10,000 tons annually. Planting chestnuts has become one of
the major sources of fiscal revenue in Jinzhai, which enjoys a good market in East Asia.
If vocational education can develop in this direction and give impetus to the development
of local economy, Jinzhai County is bound to cast off poverty within a few years.

As shown in Table 4.6, data representing Jinzhai County for 2000-2002 include
local population, yearly graduates from vocational education schools, Gross Domestic
Product (GDP), and National Income (NI).

As compared with the national per capital GDP of $970 (Bureau of Statistics
P.R.C., 2002), Jinzhai County on the range of Dabieshan Mountain shows its economic
status of per capital GDP $324. It is actually one of the more backward areas in China.

This backward area shows a ratio of yearly graduates from vocational education school out of local population for an average of 0.185%.

Table 4.6

Some Statistics of Jinzhai from 2000 to 2002

<table>
<thead>
<tr>
<th></th>
<th>Local population</th>
<th>Graduates from vocational school</th>
<th>GDP ($, 1000)</th>
<th>Per capita GDP ($)</th>
<th>Graduate (%)</th>
<th>Per capita NI ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>635,400</td>
<td>922</td>
<td>195,243</td>
<td>307</td>
<td>0.145</td>
<td>188</td>
</tr>
<tr>
<td>2001</td>
<td>637,300</td>
<td>1,127</td>
<td>204,268</td>
<td>320</td>
<td>0.177</td>
<td>192</td>
</tr>
<tr>
<td>2002</td>
<td>639,000</td>
<td>1,485</td>
<td>220,487</td>
<td>345</td>
<td>0.232</td>
<td>196</td>
</tr>
<tr>
<td>Average</td>
<td>637,233</td>
<td>1,178</td>
<td>206,666</td>
<td>324</td>
<td>0.185</td>
<td>192</td>
</tr>
</tbody>
</table>

Note: From Jinzhai government. \(^a\) the ratio showing yearly graduates from vocational education school out of local population.

Explanation And Discussion Of Results

Comparative analysis of vocational education and the development of economy and social in developed regions

Vocational education is the outcome of certain developments of society and economy, thus the social and economic development determines the scale and speed of
vocational education development. The survey of this study on vocational education in
developed regions is classified into two groups: The regional vocational education inside
the city on the one hand, represented by Huangpu Area in Shanghai, and; Vocational
education in the villages and counties on the other hand, represented by two counties in
Shandong Province.

Examining the course of the development of both cities and countries, it was found
that vocational education contributes a lot mainly in the following two aspects:

- It eases the burden brought about by the recruitment of general education on the one
  hand, and on the other hand brings up large quantities of technical personnel. One
  example is Shanghai. Shanghai’s industry and business have always maintained the
  leading position throughout the country since the 70s. The city itself is responsible for
  one sixth of the whole national taxation, which attributes greatly to the comprehensive
  and adequate system of vocational education capable of bringing up proficient and
  skilled workers.

- Up to now, because the era of market economy has been ushered in advance, great
  changes are taking place in Shanghai’s industrial structure. Weighed by the information
  industry and the high and new technology industry, traditional industries have been
  unable to adapt to the rapid development of the society. Lots of technicians are laid off
one after another, while at the same time, competent personnel who have already received higher education pour into Shanghai. Consequently, the labor market gives the cold shoulder to those technicians who have no academic credentials or even lower ones, but particular favors are granted to those personnel with higher academic credentials, providing them with abundant job opportunities.

Examining the interaction between vocational education and the labor market, it was found that, to some extent, vocational education always adjusts itself to the changes of the labor market. It has already been out dated if vocational education spends two or three years in developing new products and launching them to the market after getting the latest information from the labor market. That is to say, if vocational education fails to react actively within one year, such as adjustments in specialties, courses, teaching staff and equipment, it is bound to lose its competitive edge.

The working units are carrying out their reforms and technological innovations faster and faster. The gap between vocational education and the requirements of the employers gradually widened, so that it is even harder for vocational education to keep up with the economic development. The problem ahead is how to get out of such a plight and, at the same time, how to enhance the productive ability to promote the urban economical development. This researcher believes that vocational education should be fused into the
system of property community; that is, it is necessary to integrate both establishing the lifelong education and training system inside the enterprise and centering on the task of developing local human resources. If vocational education lacks qualified teachers, it’s hard to predict the requirements of market’s occupational techniques. Large-scale public joint or private enterprises are both capable of solving the problems derived from the lack of qualified teachers for developing vocational education and conducting training programs in a more effective way. The point is mentioned in this case study that vocational education should take the form of combining production and study.

In addition, vocational education should also develop with its own characteristics. The surveys and interviews indicated that:

Huangpu Area in Shanghai is located in the center of finance, business and transportation, featuring adequate land and water communication, ample economic strength, rapid circulation of business and information, and fast upgrading of knowledge and a great demand of personnel. All these promote the rapid development of vocational education with needed business characteristics.

To the contrary, Juye County in Shandong Province is dominated by a rural economy. The development of vocational education will be restricted by its local economic foundation and employment structure. Being different from Shanghai in terms of the
economic basis, Juye does not have the necessary conditions to create new vacancies for jobs.

Juye has a yearly increase of 1000 labors from its non-agricultural population. Because the low level of local productive force doesn’t require too much from employees’ educational level, most peasants’ children are not enthusiastic for entering common high schools. They prefer the short-term scientific training course, which can help them get rich. As a result, vocational education sees a great expansion there. Because the Juye government took notice of the phenomenon, it established in time a system of vocational education centering on agriculture. As a result, the development of vocational education surpasses the development of economy and lays a solid foundation for further development of the local economy.

Changdao County relies mainly on fishery. With the development of foreign trade, the local economy sees a rapid and sustained expansion, which also gives rise to the rapid growth of vocational education. At the same time, the developed vocational education provides more personnel seasoned with the economic development and accordingly impels the further development of local economy. Thus in this way, a virtuous circle comes into being with the economy accelerating the development of education while education advances the further development of economy.
From examining the relation between the economic development and the development of vocational education in Huangpu Area of Shanghai and in two counties of Shandong Province, it was found that economy really plays a decisive role in the scale and speed of the development of vocational education; but at the same time, the achievement of vocational education also has an effect on the development of the local economy. Advanced vocational education may promote the development of society and economy, while underdeveloped vocational education may hinder economic and social development. It is clear that the lack of effective, clear and correct vocational training aim is also a primary factor that hinders the development of vocational education in areas where economy develops slowly. The personnel produced by vocational education which does not have suitable aims is absolutely unable to meet the requirement of the development of the local economy and lacks the ability to constitute an inner drive for economic development.

Comparative analysis of vocational education and the development of economy and society in backward regions

Three representative cases were selected for this study from the backward counties at the state level in both the Southeast and Northwest. Since China has carried
out the reforms and opening, generally speaking, economy in the Southeast develops at a
great speed, but the Northwest continues to develop in the traditional agricultural and
handicraft industries.

This has undoubtedly widened the gap in the economy between the two areas.

Although being set as poverty-stricken counties at the state level, the counties in the
Southeast and Northwest differ a lot in terms of social and economic development. For
example, Dongxiang County in Gansu Province lives on the reselling of grain, and relief,
loan and subsidy of the state. Such a situation will by no means improve in a short period
of time. Its improvement depends on the nation’s increased support, as well as the
support from the society.

Anhui Province lies in the east China and enjoys a better economic condition as
compared with Gansu Province in west China. Jinzhai County in Anhui Province is
located in a backward mountainous area and is better than Dongxiang County and Zhang
Jiachuan County in terms of economy. All three counties are fiscally subsidized by the
state, and their poverty is not just a problem of local concern but of the whole country.

The survey indicated that a backward local economy is bound to affect the
development of the national economy as a whole. It is not sufficient to simply provide
them fiscal support to maintain the status quo. It’s is better to help these counties exploit
their own resources, expand to develop the economy, establish new patterns of enterprise
and develop vocational education in accord with the enterprises. Accordingly, it is
necessary to establish a set of vocational education seasoned with the development of the
local economy, transform people’s outmoded notion, and ultimately cultivate a large
amount of vocational technical personnel for prospering the local economy. This is the
key for poor areas to cast off poverty in a fundamental and complete way.

In addition, the survey shows that the present pattern of vocational education in poor
areas cannot meet the urgent need to throw off poverty and get rich. At the present time,
the nationwide vocational education system is established by the same unified pattern.
Especially the vocational education in villages is established in accordance with the goals
and needs of the urban ones. In such circumstances, it is not for cultivating personnel for
the needs of poor areas and villages, but for serving as a means for people to go to work
in the city. In view of rural reality and its development, such a situation causes the
following problems:

1. It offers specialties in consideration of the characteristics of urban students and the
   requirement of skillful labors, but doesn’t satisfy the need of economic development in
   villages or even counties. Consequently, students are usually faced with the hard
   problem of finding a suitable job after graduation.
2. It runs the school in imitation of general education. Thus students need strong
economic backing, which poor families cannot afford.

3. The national job placement system has been out of date and discarded, but vocational
education at the level of county does not take corresponding measures to adapt to such
a great change, and therefore turns out to be less attractive for students.

4. It only imparts book knowledge, instead of skills adapted to the market, and this is not
effective for practical work.

5. It is weak in teaching advanced technology and practical skills.

6. The teaching method is rigid and does teach students what they need.

7. There is a shortage of teachers for vocational education.

8. The educational investment is far from enough, which hinders the development of
vocational education.

9. It is removed from practical situations and local needs, and peasants cannot profit from
what they have learned.

   How to make a living is a particular crucial problem for peasants. If such a problem
cannot be solved effectively, vocational education cannot survive in poor areas. Poor
areas will always be haunted by poverty. As an anti-poverty measure, supported by the
state, vocational education has to take into consideration factors like natural conditions,
history and human conditions. If it just follows the pattern of developed cities blindly, vocational education will lose its own features and fail to take advantage of local resources, and then will not reach the original goal of anti-poverty. In other words, it would mean that all the state’s investment and efforts would simply be in vein.

Effect and influence of regional vocational education on the social and economic development.

As shown in Figure 4.2, the increasing trend of vocational education and GDP (Gross Domestics Product). GDP of China Increased from 948.5 billion of 1998 to 1239.7 billion of 2002. It increased about 30% within four year. The number of nationwide student recruitment of vocational education increased from 3.2 million of 1998 to 4.7 million of 2002. It showed around 47% increase. It could be expected that the former was one of contributions to the latter.

It is common for the two types of regional vocational education to seek a pattern in line with the regional development of society and economy. This also indicates that the development of vocational education in various parts of China has to follow the rule and features of the development of society and economy and establishes vocational education
Figure 4.2. The extent of nationwide vocational education and economic growth in China


to serve the construction of local economy. Only in this way, can the reforms and development of vocational education be in agreement with the social and economic development. Only then can it develop into the most important factor in promoting it.
In order to reveal the relationship between vocational education and economic development, this comparative study between regions was conducted. It showed that there exists the possibility for China’s vocational development to transform from the requirements of increasing in quantity to those of improvement in quality, when it develops to a certain level from vicious circle to virtuous circle, and steady development becomes accelerated development. What’s more, there also exists a transformation between different types; this was found after examining the interaction between education and economy. This study compared the regions of different levels of development, in order to take advantage of the horizontal comparison and observe and consider the vertical process of change.

From an economical viewpoint, vocational education is a kind of social phenomenon split up between social productive labor and other social practical activities, when the society develops to a certain historical stage. Even if it grows independently, it still cannot exist by breaking away from the society. Compared with direct vocational education in practical activities, it plays a more important role in the lasting development and updating of the society. The society imparts knowledge and vocational skills to students through vocational education to foster their becoming people with the skills and talents the society needs. Thus, the essence of vocational education is the process of
having students meet the needs of the society step by step. Consequently, the requirement of social and economic development regulates the whole process of vocational education and every aspect of teaching.

Restricted by the various aspects of social requirement, some facets of vocational education are regulated by the political and economic system, while the other aspects are related to productive activities directly. This is demonstrated in such a way that vocational education can promote the social and economic development but can be counterproductive to the political and economic system. In fact, vocational education has maintained a close relationship with the productive force as well as the whole process of productive activities, since it came into being. It is not only the dispensable constituent of productive force but the essential condition to maintain the whole process of labor. It merges together with labor and develops continuously with the development of the society.

The survey showed that there also exists special forms in terms of the relationship between education and social and economic development. There may be discrepancy between the development of the two aspects. The development of vocational education in Juye County of Shandong Province and Jinzhai County of Anhui Province surpasses the local economic and social development. This showed that education must precede the
development of economy, which has turned out to be the objective rule for developing contemporary economy and education. Just as the book *Learn to Survive - today and the future of the educational world*, published by the UNESCO, pointed out, it is perhaps the first time in human history that the development of education throughout the world has tended to surpass the economic development. It means that the rule of imbalance between the experience learned from education and the productive force has taken a new form. In other words, we should never wait to develop education after the productive force has developed to a certain level. On the contrary, we should have the education developed ahead of the productive force, when it develops to a certain level.

Although this research pointed out that vocational education and economy should develop in concert with each other and in an interactive way, we have experienced a special social phenomenon in our real lives; That is, the development of vocational education may surpass or lag behind the economic development. There are several reasons for this phenomenon:

1. **Vocational education lags behind the economical development.**

   When the economy begins its pace of development, education may not necessarily adapt to it instantly; there is a lag period. Economy in this period is unable to supply adequate support to development vocational education. Only when
the economy develops to a certain level and needs competent personnel, will it put
great emphasis on vocational education and then invest heavily in it. Sometimes
education may lag behind both the social and economic development, just as the
situations illustrated for Dongxiang County and Zhang Jiachuan County of Gansu Province. This indicated that education reflects the requirement of the society and
economy, though not directly. Sometimes the relationship between the two can be
demonstrated.

(Mr. Zhang, the section chief in charge of vocational education in Shandong Province, 2003).

Thanks to the implementation of the rural system of contracted responsibility since
the 1980s, the county’s economy has shown a conspicuously increased momentum. In
such a case, it is supposed that the county should have invested more in vocational
education. However, vocational education here showed a development at turtle’s pace. As
few as the village vocational high schools are, they always fail to get a full enrollment.
This entire dilemma is caused by the prevalent concept of education -- receiving
education aims upon entering a higher school. If this goal cannot be achieved, students
might as well enter the labor force immediately. Improvement in the proportion of
students entering schools at a higher grade does promote the development of general
education but ignores vocational education. The fiscal funds cannot be allocated in time, so some teachers get IOUs after a year of hard work. They have no choice but to abandon the present job and transfer to work in other developed areas. All these factors lead to the fact that the county’s economy develops with great speed, while vocational education still trudges its way forward at a slow place.

2. Vocational education surpasses the economical development.

There are complicated reasons accounting for this. For example, in Juye County of Shandong Province, vocational education developed at a greater speed than the economic development, in which non-economic factors played a fundamental role. This was due to the people’s traditional concepts and unrealistic optimism towards its development. Such a phenomenon will eventually weigh down the development of local economy with a heavy burden. On the one hand, it is because the limited financial resources and capacity of providing employment chances cannot support continuous investment in the development of vocational education; and on the other hand, it is because the problem of employment for most graduates will soon emerge, turning out to be the biggest force that hinders the development of vocational education, resulting in the shrink. Therefore, the development of the vocational education has to be brought into line with the development of local economy to
achieve a sustained development.

If Juye county spares some efforts to develop various kinds of business, instead of just vocational education, such as township enterprises, the processing industry of agricultural and side-line products and breeding industry of poultry, as well as developing the network of township business, will not only promote the development of the rural economy, but also solve the problem of employment for hundreds of graduates of vocational education.

Even within the same period of time, vocational education in different regions may not follow the development of the productive force closely. It may lag behind or surpass the development of the productive force. In addition, it may not change with the change of economy, but may lag behind or surpass the pace of the society. However, it is believed that such a situation is just temporary and occurs infrequently. Vocational education will present itself in a different form under various kinds of social pressure, but eventually will conform to the rules in agreement with the social and economic development. Thus it can be said that vocational education really exerts fundamental influence on the development of local society and economy.

After investigating the labor resources and the situation of employment in the six regions, it was found that such factors as large base of Chinese population, rapid growth
of new labor and great change in the industrial structure have caused the greatest problem regarding employment that has ever happened before in China. For example, in Dongxiang County and Zhang Jiachuan County of Gansu Province and in Jinzhai County of Da Bieshan Mountain area, a large number of surplus laborers are waiting for job. The case is the same case with Huangpu Area in Shanghai and Juye County and Changdao County in Shandong Province where lots of workers are laid off.

Mr. Huan Shitong, the clerk of the Vocational Education Office of Huangpu area, pointed out that both the government and the whole society were highly concerned about the laid-off workers. The national labor union has established more than 300 employment institutions and successfully helped 200,000 laid-off workers to find jobs again. At the same time, it has opened more than 1,300 job training institutions and 34,000 training courses in various specialties, and more than one million people have received training. With respect to the practical situation, these measures are far from enough because vocational reforms have proceeded with far greater speed than the job training has. The common workers who were trained by the basic education simply found it really difficult to adapt themselves to the rapidly changing society, regardless of their knowledge and skills.

However, examined from a wider scope, the change of the industrial structure,
which was brought about by the social and economic development, is also the trend for various major industries to transform from labor-intensive to skill-intensive ones. If vocational education cannot undergo complete and profound reforms, it will be found that the rate of employment will increase arithmetically, while at the same time, the number of laid-off workers will grow geometrically. Such problems have emerged or are emerging throughout the whole world, and the fact is that on the one hand, lots of people lose their jobs, but on the other hand, suitable labor resources, have a shortage of employees and are and in urgent need.

As shown in table 4.7, it was found that:

1. The higher the ratio of graduates from vocational education versus local population is more both per capita GDP and NI, as in Huangpu, Juye, and Changdao.

2. The lower the ratio of graduates from vocational education versus local population is less both per capita GDP and NI, as in Dongxiang, Zhang Jiachuan and Jinzhai.

3. As compared with the ratio of graduates from vocational education versus local population, per capita GDP and NI in the nationwide perspective, this study found the data of the developed districts (Huangpu, Juye, and Changdao) are much higher than the nationwide level, on one hand. On the other hand, the data of the backward districts (Dongxiang, Zhang Jiachuan and Jinzhai) are much lower than the nationwide
level. Although China is the most populous country in the world, most people still live in poor conditions. China is trying best to develop the economy. In such a circumstance, vocational education is going to play a more and more important role for the economic and social development. In other words, there is a need for acceleration of the vocational education development, which would result in massive return on such investments for it.

**Table 4.7**

Comparing And Analysis With Six Regions In Some Statistics

<table>
<thead>
<tr>
<th>Region</th>
<th>Graduate (%)</th>
<th>Per capita GDP ($)</th>
<th>Per capita NI ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huangpu</td>
<td>3.195</td>
<td>19,417</td>
<td>2,986</td>
</tr>
<tr>
<td>Changdao</td>
<td>2.584</td>
<td>6,282</td>
<td>1,067</td>
</tr>
<tr>
<td>Juye</td>
<td>1.687</td>
<td>2.584</td>
<td>998</td>
</tr>
<tr>
<td>Jinzhai</td>
<td>0.185</td>
<td>324</td>
<td>192</td>
</tr>
<tr>
<td>Zhang Jiachuan</td>
<td>0.035</td>
<td>100</td>
<td>105</td>
</tr>
<tr>
<td>Dongxiang</td>
<td>0.05</td>
<td>94</td>
<td>99</td>
</tr>
<tr>
<td>Whole Country</td>
<td>0.36</td>
<td>963</td>
<td>613</td>
</tr>
</tbody>
</table>

*Note. Data summarized from Table 4.1 – Table 4.6. a the ratio of graduates from vocational education out
Vocational education is one of many factors able to influence a nation’s GDP. From this study, a trend for the development of vocational education to improve economic conditions in China could be found. In fact, it is difficult to define to what extent vocational education would affect a nation’s GDP. Hi-tech industries and service industries are manipulating the development of economy and society rigorously in 21st century, which requires strongly well-trained and professional people to serve as operators on the production sites. In this respect, vocational education, with the ability of training more qualified talents, is having more and more impact on local economic and social development.

From the view of wide and continuous social problems and trends derived from the current employment situation in China, what we should do now is investigate how vocational education can adapt itself to a series of changes originating from reforms; what the possibility is for vocational to grow into the optimal choice for people’s employment and re-employment, and; what the feasibility of life long vocational education and continuous training is.

Summary
The two types of areas for carrying out interviews and case studies in this study were distinguished as developed regions and backward ones.

The former has the characteristics of well-developed economy, a high level of development, the advantage of man-power resource, possession of a large number of colleges, universities and academic research institutions, and a comparatively perfect system of vocational education.

The latter lacks solid economic foundations. Its infrastructure facilities must be strengthened, and the construction of information, Internet, traffic and natural resources should be quickened. In the long run, to these regions, the most important thing is to improve human quality. Qualified human resource is the major criterion to enter the era of knowledge economy.

As compared with the national per capital GDP of $970 (Bureau of Statistics P.R.C., 2002), Huangpu district, Juye, and Changdao county, this shows a higher and developed level of their respective economic status. Whereas, Dongxiang, Zhang Jiachuan and Jinzhai county show their respective economic status to be backward ones.

Vocational education in different regions may lag behind or surpass the development of local productive force and the pace of the society. On the other hand, it also doesn’t necessarily change with the change of economy. In view of such a relationship, it is
believed that such, lagging behind or surpassing, is just a temporary phenomenon occurring infrequently.

Hi-tech industries and service industries are very closely related to the development of economy and society in 21st century. These industries need strongly well-trained and professional people to serve as operators on production sites. In this respect, vocational education is capable of training more qualified graduates and will have an increasing impact on local economic and social development.
CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Through the analysis of vocational education in China, it can be seen that with the acceleration of China’s economic development, China’s economy has gradually approached the economic developing levels of the developed countries, and new types of occupations emerge continuously. It is far from enough to fill the vacancy of new occupations with newly added labor force, so retraining the laid-off workers in preparation for new occupation seems compulsory. Vocational education institutions in China must forecast and grasp the trend of occupation changes, adapt themselves to scientific development and the changing occupation structure and produce the features of talents most wanted by the society such as those of knowledge, skills, occupation and moral character. This has enabled vocational education to cultivate talents and also have the service function, which means that it can provide useful information in time for both the supply side and demand side in the labor force market.

The primary effect has been achieved as a result of the attempt to run a school jointly by school and enterprise, but the renewal of the enterprise products and the technological progress is exceeding the renovation speed of vocational education courses. Thus, how to be adapted to the speed of the technological development is an urgent problem requiring
prompt solution for vocational education.

Summary of the Study

Deepening the comprehension of the vocational education in a new circumstance, and improving its status and impact in the social and economic progress are the demands of the social and economic developments after China has entered WTO. In the new circumstance, the impacts of vocational education on economic development become more obvious. Establishing a vocational education system to meet the needs of social and economic progress becomes much more important. To push vocational education forward is very important to the effective use of manpower resources and improvement of the workmen’s quality.

This study tried to analyze the impact of the vocational education on the social and economic progress mainly from the aspects of sociology, economics and pedagogy. This research has adopted the method of triangular corroboration analysis in the scope of qualitative analysis. In addition to the literature analysis, interviews on the spot and telephone interviews, this study also carried out case studies in three areas with better vocational education records and three areas with worse records.

As we enter to the 21st century, vocational education in China is facing
unprecedented challenges and opportunities. The establishment of the socialist market economic system has set a good external circumstance for vocational education. But the development of vocational education in recent years has not been so satisfying, for it has begun and continued to deteriorate. To determine the reasons for deterioration and the methods to prevent it from becoming worse are the subjects and goals of this study.

Findings

After China entered WTO, the social economy entered into the period of transformation, which is represented in two aspects: First, a transformation of economic system is moving from the traditional planned economy to the market economy. Second, the transformation of the world economy is moving from an industry economy to a knowledge economy.

These two major economic transformations could lead to the imbalance of economic development among regions in the initial periods, but finally they will eliminate the regional differences. With the establishment and perfection of both the national market economy system and the enterprise competition system, the economic groups will surely make trans-regional investment. In such an investment, the cost difference of resources, manpower and capital would be used to pursue benefit, efficiency, and comparatively
high ROI (return on investment), the kind of investment finally will bring along the
development of the regional economy. By this means, the difference among regional
economy will be gradually reduced. Along with this complicated economic activity and
the constant change of knowledge and skills, vocational education can affect and prompt
the economic and social development in accordance with the basic developing rules.

The development of the market economy in China has brought about not only an
unprecedented opportunity but also a challenge for the development of vocational
education. In order to establish the market economy system, the planned economy
system should be discarded and large-scale and substantial adjustment should also be
made to the current industrial structure and employment structure, this would result in
the necessary changes of the employment types and professional demand types in the
employment market. Nevertheless, most of the current labor forces in China were trained
according to the requirements of the planned economy system, so now it is bound to
retrain them. Vocational education in China will face a great demand market because it
will provide retraining for this several hundred million strong labor forces, as well as to
foster the new labor force. In the meantime, it is also confronted with the great challenge
and impact from the transformation of economic structure, which is represented by the
following four aspects.
Influence of the Industrial Structure

The planned economy has played a leading role in China for a long time, and the outstanding feature of its industrial structure layout is the large proportion of labor force and agriculture versus relatively small proportion of service industry. According to The World Development Report in 1990, by the World Bank, the proportion of service industry in GNP in China is one of the lowest among all the countries in the world. The corresponding employment structure has formed according to this kind of industrial structure. The arrangement of labor force demand has kept its original order of agriculture, hi-tech industries and service industry until 1991. But in view of this economic development trend, the labor force will be gradually transformed from agriculture to hi-tech industries and service industry.

From relevant forecasts and analyses from 2000 to 2020, the industrial structure of China is arranged in the order of hi-tech industry, service industry and agriculture according to their respective proportion in GNP and the employment proportion of labor force.

In 2000, the proportion of agriculture will decline from 28.4% in 1990 to 20.64%, and to 12.78% in 2020. The proportion of hi-tech industry will increase slightly, with 43.6% of the GNP in 1990, 48.80% in 2000 and 47.22% in 2020. The proportion of
service industry will be rapidly increased, with 28.0% in 1990, 30.56% in 2000 and 40.00% in 2020. In 2020, the characteristics of the Chinese industrial are that compared with those countries in which the average GNP is from 1500 to about 2000 dollars, the proportion of service industry in China will still be small for about 8% lower, and the proportion of hi-tech industry will keep exorbitant for about 10% higher (Hua, 1998).

The labor force structure will be facing enormous adjustment. In order to be accustomed to this kind of adjustment, vocational education need to put the emphasis on training talents for hi-tech industry and service industry. The urban vocational education model has been initiated in accordance with the structure layout for the stabilization of hi-tech industry and the development of service industry. Take Shanghai as an example. The impact is continuous and the development of the market economy and the transformation of industrial structure have put forward new requirements for vocational education. Thus, only through continuous adaptation to the changes of the market economy can vocational education in Shanghai survive and develop.

From the relevant forecast and analysis in 2000, the amount proportion of agriculture, hi-tech industry and service industry in Shanghai is 2:53:45, and it is predicted 1:39:60 in 2010. At present it is close to that in the developed countries. In 2000, the employed population in Shanghai was about 7.8 million, of which labor force
distribution in agriculture, hi-tech industry and service industry is 8:50:42. In 2010 the employed population will reach a total of 8 million, with the distribution of these three industries as 7:42:51 (Shanghai City Program Office for philosophy and social science, 1998).

Concurrent with the labor force transfers among the industry sectors, large-scale occupation transformation will appear and the substitution process of high-quality talents for low-quality labor force will be expedited. The change of demand for laborers’ knowledge and skill will be a new challenge for the contents and methods of vocational education. In Shanghai, however, the proportion of higher vocational education is too small, while that of middle vocational education too high, which conflicts with the demand structure of the higher industrial structure and laborers’ advanced skills in Shanghai. In view of the present structure of vocational education, the cultivation scale for high-level and professional talents is rather small, and can not meet the needs of the developing mainstay industry and new high-tech. Shanghai is in urgent need for the transformation of a set of vocation-specialized schools into higher vocational school.

The current decline of rural vocational education is also the result of the impact from the adjustment of industrial structure. More and more of the rural surplus labor force floats to the cities and then gradually infiltrates into the urban hi-tech industry. The
development of rural middle vocational education that enables the country to face hi-tech and service industry is a necessity. Only then can the rural surplus labor force can be trained into a considerable labor force resource.

**Economic Transformation**

Vocational education, which is closely related to economic development, will, for certain, make positive responses with regard to mechanisms, specialties, and curricula setting and so on. It could then meet the needs of the economic transformation and industrial adjustment for new knowledge and skill. In particular, the school-running mechanism should be more flexible, including not only pre-vocation preparation education, but also post-vocation training or job-shifting training; not only possessing normal experience, but also having short-term training; not only school vocational education, but also on-the-job training in enterprises. The diversity of the education forms has not only enlarged the education scope in society and satisfied various demands from social members of different levels, but has further clarified the training objective. In contrast, a general view showed that due to their historic and geographical conditions, in addition to the shortage of sufficient special faculties, the popularization of vocational education has had a poor performance in Dongxiang Zu, Zhangjiachuan County and
Jinzhai County, which negatively affects their economic transformation and social development.

**Contributions of Vocational Education to Economic and Social Development**

Vocational education transforms the simple labor force that gives priority to physical labor and using experience and skills to the complex type that is engaged in higher order skills and mainly uses technology and knowledge. Furthermore, it could transform the potential for productivity to practical and direct productivity, consequently enhancing the knowledge base in the labor, changing the form of the labor force and adding a strong stamina to it. Vocational education provides knowledge and skills that enable one to be better adapt to the economic development. When such knowledge and skills are applied in the production process, they can improve the productivity and prompt economic development. A complete vocational experience system, which must ensure the trained talents meld with the occupation structure and economic structure in society, must pay attention to the quality and quantity of talents and give regard to whether they can be find employment.
Long-Term Development Goals

Vocational education aims at training specialized technical personnel who can directly undertake production operations and business management for all types of industries. Therefore, it features a direct service to the economy. Compared with general education, the link between vocational education and productivity, production structure and economic development is closer and more direct.

Impact of Labor Force Market

In the early days of the reform and opening up in China, hundreds of thousands of workers rushed into Hainan to pursue business opportunities in order to realize their worth. After the establishment of the labor force market, people strive for justice, freedom and competition so as to make the best use of their talents. According to the feedback information from the labor force market in recent years; however, both sides of supply and demand in the labor force market have not achieved satisfactory result yet. Most people, especially those laid-off workers, had great difficulty in finding a job through the labor force market. The reasons for this are as follows.

1. After the adjustment of industrial structure, many new vocations were short of talents and skills, but the applicants were unfamiliar with the new occupations, so
they could not pass the interview.

2. Many on-the-job personnel looked for new development opportunities in the labor force market, but usually they couldn’t find ideal posts.

3. Due to the influence of the traditional employment concept, people bore such high expectations toward employment that they often missed good chances.

4. Because many laid-off workers only have a single skill, they could not meet the requirements of a new occupation, which makes it difficult for them to apply for a job.

One of the important reasons for these kinds of phenomena is that in the market economy system, the employment structure is highly concentrated on low-level industries, which leads to low productivity and laborers’ quality. Now that high-level talents are more and more needed by the society, the competition focus in the labor force market is turning to those high-level talents. The standard of many employment units has made some job-hunters flinch. The relatively low quality of talents is an important reason for the low production rate of a trained labor force. Undoubtedly, it is vocational education that will assume the responsibility to improve the laborers’ quality. How to improve their quality and what are the requirements of occupations and skill for laborers; all these have put forward new demands for vocational education.
Impact of Hi-tech Industry

China’s hi-tech industries are divided into three levels. First is the research and development of hi-tech, including the research in six fields: biology, information, energy, material, laser, and automation. Second is the industrialization of hi-tech, including the implementation of China Torch Program and the establishment of hi-tech industry development zones. Third is the infiltration and expansion of hi-tech into traditional industries to transform the industrial structure and improve the whole level of manufacturing.

Impact of Specialized Scientific and Technical Personnel.

One of the criteria for measuring hi-tech enterprises is the proportion of specialized scientific and technical personnel. The scientific research and the technological development levels in Shanghai always take the lead in the country, but compared with the advanced level of the world, the scientific research gap is for about 15 years behind. Behind manufacturing techniques as they were about 20 years, and hi-tech industrialization is even longer. The current proportion of hi-tech industry in the value of industrial output in Shanghai is about 3% to 4%, that of Japan 35%, U.S. 30%, Germany, U.K. and France 20% (Shanghai City Programming Office for Philosophy and Social
At present, the hi-tech industries are on the road to development. Because the technological production is not perfect and because the outflow of hi-tech as well as hi-tech personnel is streaming abroad, the hi-tech industrialization is now confronted with a potential crisis.

**Influence of Higher Vocational Education**

The training objects of vocational education in China are mainly those primary-level or intermediate workers, who have not been familiarized with the developing situations of the hi-tech industries. At present, the rather small scale of the higher vocational education, the urgent need of the senior skilled workers, and the lack of the qualified personnel in hi-tech industries, have become the important factors that slows the development and popularization of the hi-tech industries in Shanghai.

In general, vocational education schools in China have the common desire to develop to a higher level, and many schools have attempted to handle the production of the senior professional titles. Compared with the common higher schools, vocational schools have the special advantage that they can train the personnel directly according to the supply and demand conditions of the market and the demand of the hi-tech industries.
The objective of vocational education is to improve the laborers’ working capabilities, management skills moral standards. This would be beneficial for both the individually owned enterprise and collectively owned ones.

Conclusions

The results obtained in this study are in accordance with what was expected in the beginning of the study. High-quality workers are needed for every profession. In the transforming process, the modern enterprises are now confronted with the challenge from the hi-tech information era, as well as the development and perfection of the market economy system. In order to achieve a viable and dominant position during the market competition, it is necessary for the modern enterprises to improve the quality of products and service, which depends upon the improvement of the employees’ quality and their working techniques. From this point, it is believed that it would be more urgent to enhance the teaching quality and the large-scale benefit of professional experience.

While in view of the development of vocational education, people won’t get used to the fast-changing social and economic situations just by receiving the one-off education. Therefore, continuous education and the life long vocational education will be gradually improving the economic development and the social development. In this sense,
vocational education becomes the channel for the exploitation of the human resources.

Since 1949, vocational education in China has trained a great number of skilled workers, which has supported the economic development in China. The economic development in China under the planned economy system proceeded at a slow pace, and the trained workers possessed limited skills that could only enable them to undertake simple work. Today, these skilled workers are confronted with the problem of losing their jobs, and vocational education system under the planned economy has not yet been able to adjust to the demands of the market economy for the laborers. Thus, the renovation of the urban vocational education system should coincide with the trend of the economic development in cities, transforming from simply vocational education system reform to general restructuring and reengineering. Finally, it should be established that the vocational education system can be associated with the development of the regional economy in China.

The tasks confronted by vocational education are diversified and complicated, including not only the pre-employment vocational education; but the post-employment vocational training; not only in cities, but also in the country; not only those enterprises owned by the whole people, but the collective, individual, the joint-venture and the exclusively foreign-owned enterprises; not only the large scale and medium scale
enterprises, but a lot of small ones; not only the advanced knowledge &
technology-intensive enterprises, but those labor-intensive ones. All the above has
necessitated the need for vocational education to transform from the singular, fixed mode
to the dynamic, all-in-one, pluralistic, multi-layer developing one, which is expected to
make the development of a vocational education system that has adapted to the situation
of China.

In fact, under the conditions of the production economy, enlarging the
decision-making power of the schools and running a school jointly by the vocational
school and the enterprise is to better realize the mutual reinforcement for optimizing
allocation of resources. In order to exist and develop, the enterprises must continuously
create new products and there is also the need for keeping a group of high-quality staff. If
the enterprises chose to train the staff all by themselves, then they would be
heavy-burdened as well as in great difficulty. In this sense, to carry out the training with
the vocational schools would be a feasible solution that can not only meet the need of the
social transformation but also obey the market economy principles. It is hoped that the
joint efforts to run a vocational school could foster the talented personnel that can be
suited to the hi-tech changes and be proficient in management for the enterprises. At the
same time, current problems such as the low quality of the present vocational education,
lack of money, teachers and teaching materials, etc. need to be solved, and only by doing so could vocational education be expected to meet its service functions.

Rural vocational education in China is lagging far behind the development of the local economy, especially in the west of China, the areas inhabited by minorities and border areas. Vocational education in some of these areas is just beginning and has not yet developed to the needed level. The scientific and technological progress surely is the key point for establishing the mechanism of the market economy, which puts forward the requirement to enhance rural vocational education, to improve the laborers' quality in these areas and to exert the personnel's working, innovating and management potentiality.

In view of the circumstances, the current quality of rural laborers and the quantity of special talents are not enough for helping these areas enter the market economy form from the traditional planned economy form. The quality of rural laborers is commonly low with their education level and school time only reaching those of elementary pupils. In some individual areas such as Dongxiang County in Gansu Province, the task of illiteracy elimination is still arduous, and such kinds of education quality could not fit for the development demand of the market economy.

Upon entering the 21st century, China is experiencing the transformation of industrial structure from traditional industry to hi-tech industry. The economy has turned from the
traditional planned economy into the market economy. Vocational education needs to be established in a favorable interior and exterior environment, so the emphasis of vocational education is to transform from the quantity optimizing to that of quality and structure. In view of the levels of vocational education, it should extend to higher levels, develop higher vocational education and strengthen medium-level vocational education.

In view of the pre-employment education and post-employment education, post-employment vocational education should be developed, which includes on-job training and job-shifting training; in view of the layout of vocational education, rural vocational education should be developed; and in view of the specialty structure of vocational education, the emphasis should be put on the vocational training for service industry.

Unprecedented changes have occurred to the rural economic structure in China. Especially in the outskirts of cities, the structure has developed from single agricultural economy to diversified economy including agriculture, industry, commerce, construction, service, etc. It also has developed from the single-product economy to the comprehensive commodity economy. With the development of the commodity economy, the interior structure of agricultural production has also made great changes, such as the development from traditional agriculture to featured agriculture, from petty farmer
production to the agriculture with high yield, high quality and high efficiency. The structure also has developed towards the foreign-oriented exchange earnings. Thus the development trend of the specialization and modernization of agricultural production appears. For example, in order to develop the commodity economy, Jinzhai County in Anhui Province planted fungus seed gardens and mulberry gardens of ten thousand mu and formed the foreign exchange earning export base with a coordinated process of planting, processing and finished products. And Zhangjiachuan County in Gansu Province developed stockbreeding, forming the business base for fur products that includes a coordinated process of breeding, coat processing, leather ware and leather distribution.

The rapid development of township enterprises in China has completely changed the destitute and underdeveloped state in the rural areas. With the improvement of the peasants’ living standards and the enhancement of rural economic strength, rural funds begin to flow into the service industry and tourism, which guides the rural vocational education to transform to service industry and tourism. In Juye County in Shangdong Province, it could be seen that new industries have proposed demands for the laborers’ knowledge and skills, and also brought forward new challenges for the contents and methods of vocational education. Vocational technical training is no longer confined to
the normal vocational experience structure, and the informal vocational technical training has also emerged in large numbers. Vocational education that only depends on special schools has been far from enough. The ability and experience of laborers, such as the ability to solve questions, to acquire and make use of information and to learn scientific and technical knowledge, etc., need to be fostered through life long education in working places and certain cultural atmosphere. Such a trend has become more and more evident.

Recommendations for Future Research

China is a large agricultural country. It could be of great significance to study the features of the economic structure and vocational education in the rural areas. The earliest social transformation in China began from agriculture, and the success of rural economic system reform in the beginning of 1980 has undoubtedly demonstrated the need for the whole social and economic system reform in China. The succeeding social changes, especially the establishment of the socialist market economy system, began to lead millions of peasants into the developing market and enabled agriculture to be developed into a kind of high-benefit industry after walking out of the traditional managing pattern due to the market competition. It is another important and profound
renovation for the country after the establishment of family-contracted system with remuneration linked to output.

Limited by conditions such as the inconvenient travel in the country, which involves a wide range and large population ratios, this study has met great difficulty in the investigating process. The adjustment of the rural industrial structure has put forward the demand for the laborers’ knowledge and skills, which indeed is also a very important link in vocational education of China. As a result, for the rural vocational education that prompts the agricultural science and technology, it would be of great research value to seek the new breakthrough in the strategic choice of the agricultural development.

Vocational education in China is no longer confined to the normal vocational education structure. The informal forms of vocational technology and scientific training appear in a great number. The problems such as how to solve problems, how to get and make use of information and how to learn science and technology and so on should get solved in the working place and under the cultural circumstances. As for the problem of carrying out the life long vocational education, it should be discussed further.

Implications
Compared with developed countries in the world, the biggest problem in China is the productivity lag behind. Although China has the largest population in the world, its economic strength ranks much lower. Governments in developed countries have the ability to provide their people with social welfare guarantee, while the China government cannot offer such kind of promise. The reason is that during its developing process, vocational education in China was confronted with too many problems to comprehensively promote the national economic and social development. The reasons for this are described below.

1. Because of the large population and lack of funds, government-supported educational funds are far from enough to satisfy the actual needs. For example, China regulates that the education fund for employees should account for 1.5% of their total salary.

2. The mass of workers doesn’t have a sufficient theoretical understanding of vocational education, and the traditional concept that he who excels in study can follow an official career is deeply rooted in people’s mind, which is represented by emphasizing school experience and belittling skills.

3. Leaders commonly think much of work and little of cultivation of skills. They pay great attention to the introduction of talents but few to their cultivation for sustained
development. They attach much importance to short-term economic benefits but little to the long-term one that is brought up by comprehensive technical renovation.

4. Vocational education lacks powerful guarantees of law.

5. Vocational education lacks professional faculty and management talents.

6. The management level and quality of vocational education lag behind those in developed countries.

Since entering the WTO, China has been confronted with many new opportunities and challenges. On the one hand, the demand for vocational education has increased and it has a promising market prospect; on the other hand, with the influx of foreign training resources, the competition has become vigorous. The development of vocational education will take on the following trends: market orientation of training activities, enterprise orientation of training structures, internationalization of education contents, modernization of training methods and training system for life. In order to promote vocational education to develop towards an open, advanced and higher level, the development of vocational education should be based on the platform of international competition and cooperation, and it should tightly encircle the objectives of social and economic development. Nevertheless, the development of vocational education in China must also conform to the social and economic development.
1. Adhere to the principle “revitalizing China through science and education and to the path of sustained development, and reinforce the management of government on vocational education by the loosened policies, sufficient funds and proper service.

2. Establish and perfect a vocational education system suitable for regional economic development, and enhance the strength of vocational education reform, including specialty structure, setting of materials, teaching measures and educational methods.

3. Establish and perfect laws and regulations for vocational education, and ensure the sustained implementation of vocational education reform.

4. Establish the specialty authentication system and the employment system. Vocational education in each trade should be standardized and should have a unified standard for quality inspection.

5. Establish a highly efficient and polished faculty troop and management cadre troop, which can meet both the need of vocational education for its life development and the need for the participation in international competition.

6. Strengthen international academic exchange and cooperation, carry out exchange activities with foreign vocational education institutions and all kinds of organizations, and gain knowledge of the development status and trend of foreign vocational education in time.
7. Strengthen the cooperation between vocational schools and enterprises. Enterprises should increase the investment and enhance the guidance to vocational education.

8. The scope and contents of vocational education should constantly renovate themselves according to the current reality. The level and quality of vocational education should be enhanced. The cultivation of the ability of sustained development for students is essential. Popularize the use of computer-dominated modern methods in teaching management, student status management, teacher assessment, information data, and realize the objective of resource sharing through the inter-connection of networking in the city.

9. Intensify teaching reforms, actively establish the learning enterprise, and further promote the scale and benefit of the combination of production and teaching so as to achieve better economic and social benefits.

10. Realize the standardization, and modernization of the management of vocational education.

Four Principles in Favor for Perfecting the Vocational Education System

System Reform in 1985 pointed out that socialist modernized construction is not only in need of senior scientific and technical experts but also in urgent need of hundreds of
millions of urban and rural laborers with good vocational training. Without this big labor
and technical force, advanced science and technology, as well as advanced equipment,
would be unable to be transformed into practical social productivity. In view of the large
population in China and the relatively low quality of its labor force, it is urgent to
establish the diversified and multi-layer vocational education system that is closely
related to economic and social development and labor employment.

Principles for the improvement of vocational education system are in favor of exerting
the functions of the country, market, society and school mechanisms. They are:

1. The exertion of the functions of national mechanism

   The primary measures that need to be taken by the country to promote education are
education legislation and the allocation of education funds. The main contents of this
process are to establish education guidelines, select strategic emphasis, and coordinate
the overall scale of education, developing speed of reform, and the structure of
education.

2. The exertion of the functions of market mechanism

   The operation of the vocational education system is directly related to market
mechanisms. Through labor force markets and talent markets, market mechanisms
manipulate and influence the scale and structure of education, as well as the quantity
and quality of talents. Competition in labor force market has impelled schools to adapt themselves in a timely manner to the demand of the society for talents, and subsequently enfettering the amount of student recruitment, student employment and teacher recruitment. As the function of production is spontaneous, it requires the nation to intervene in a macroscopic way; therefore, limited market regulation and proper national intervention are combined together.

3. The exertion of the functions of social mechanism

Various civilian coordination committees, consulting institutions, and joint committee of headmasters, also including enterprise community, trade labor union, parents, students and relevant mass groups form the new forces can manipulate and affect education apart from the nation and the production. These social civilian coordination institutions have played an important role in the participation in the macroscopic decision-making of education, in the stipulating of school running guidelines, in school curricula reform and in the social assessment.

4. The exertion of the functions of school mechanism

This mainly refers to the self-determination power of schools. Under the circumstances of the market economy, the vigor of schools is from the combination and interaction of the pressure from governments, market and society and the
From this, it can be concluded that in the market economy, the operation mechanism of national education system is not a simple market mechanism but the unified mechanism in which the nation, society, and schools function together in the market economy. The primary revelation from this conclusion is that in the process of China’s transforming from socialist planned economy to socialist market economy, it is not suitable to make the sweeping statement that market mechanism should be regarded as the operation mechanism for educational system.

*Three principles necessary for the perfection of the education system*

There are three principles necessary for the protection of the education system, and they are:

1. The levels of the experience management required in the system should be clear.

   The principal function of the country’s management on education is legislation. The key of the education system reform in China is that the lawmaking departments in the government could administer the education and provide the basis for the management to avoid blindness and randomness. Only by executing the law can the administrative departments in the government set the measures for
the macroscopic control and regulation according to the need of the market and society.

2. The educational administration at different levels should be in clear its distribution of post, duty and right.

The distribution of post, duty and rights should be restricted by an objective and reasonable basis as well as the educational rules. The civilian coordinating institutions assume the function of information feedback, which makes them a bridge between the government and the society. The civilian institution groups, which are made up of all walks of people such as entrepreneurs, economists, scientists, educationists, parents and students, come into being, and they become an important link in the perfection of the educational management and supervision system because they know the market demands directly and are most sensitive to those needs.

3. Enlarge the self-determination power to run a school

In order to promote the teaching activities, schools have to make timely responses to the constantly changing market and social demands. The self-determination power for running a school doesn’t mean that the headmaster can decide everything. The function of the teaching staff and student groups should be further encouraged and promoted. This kind of self-determined power is clarified step by step through
educational reform.

On the whole, the educational management system should be gradually transformed from a simple administrative management system to a synthetic one with the combination of talents of the government, experts and the society during its transformation process.

Future Research

Generally speaking, a large quantity of raw material collected through questionnaire is much preferred in research. This study pursued that kind of research. But this study does not have the required resources such as financial ability, time, or social relationship, to launch local people to receive self-administered questionnaires and carry out a deep research. As a result this study must perform the research realistically, emphatically and selectively.

Actually the process is as important as the result itself. The preciseness during the process can yield a right result, and this case, it did.

Final summary

Through the study of vocational education and economic development, we can obtain
the following:

1. Creation of a good vocational education system in the society. The country’s policies and its aims must focus on realizing the equality between vocational education and general education.

2. Building of a benign cycle in which education promotes economy, and the economy pushes the development of education.

3. Meeting the needs of social economic development, and establishing scientific labor market mechanisms.

4. Improving the chances of survival of vocational education by improved laws.

Vocational education is very important now for China. It is well-known that China is the most populous nation on earth. Poverty is still rampant despite the rapid progress that China has made in recent years. The majority of the people in China do not have easy access to quality higher-education. The problem is two-fold; funding and competitiveness.

Vocational educational education is accessible to many people, and therefore people with limited means are able to afford tuition. In addition, government educational funding is available. This is good for societal stabilization. Education reform is transforming China. More people will be able to be self-sufficient, and the crime rate will
decrease. Furthermore, vocational instruction is practical, and we must be mindful of the structure of the government. Moreover, because of the fact that there are so many impoverished regions in China, it is a monumental task to decide how to allocate funds in order to establish vocational training schools and keep them going. One problem that should be addressed is recruitment of both students and faculty. This is an economic challenge.

China is still a third world country where basic needs are barely met for millions of people. In other words, it is difficult to get by. Chinese are pragmatic; that is to say that even though the standard of living is improving, and people are hopeful, they are, at the same time, content to receive vocational education. China does not have a high illiteracy problem. It does have a problem with the accessibility to higher education. At the present time this is not feasible.

We must study different methods, which have worked outside of China. In China, everything emanates from the central government, Because of red tape, progress is slow. There are a lot of governmental subdivisions. We must not only learn from the past (in China and elsewhere) but create new ways to accomplish our goals. Implementation must be carefully planned, carried out, and monitored. Personnel must be well-trained, and they must be given incentives to maintain smooth operation. Present vocational
education needs more time and investment. As for future vocational educational reforms, I propose that more in-depth studies be carried out and that comparison studies are critical. It goes without saying that maintaining positive cash flow is vital to vocational school survival and improvement as well as prosperity. The legal and educational departments must work hand in hand. I believe that there will be many economic benefits because of the minimum amount of investment and the low income of the work force.

Not everyone is capable of or meant to go on to higher education, and therefore vocational schools fulfill a void. Even in America, there is no stigma placed on vocational education. Many people earn a good living upon completion of technical or vocational school training. Schools can be built near plants, so that students may learn practical experience there.

If would be a good idea to allow students to work part-time. Under such a particular situation, work-study programs should be instituted whenever possible.
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