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**THE PSYCHOLOGICAL ADJUSTMENT OF VOCATIONAL HIGH
SCHOOL STUDENTS: A STUDY OF CHINESE ADOLESCENTS**

by

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**A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Psychology)
in The University of Michigan, Ann Arbor
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For my parents,
whose faith in me provided me the foundation,
And to June,
whose love accompanied me through this endeavor.

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TABLE OF CONTENTS

DEDICATION	i
ACKNOWLEDGMENTS	ii
LIST OF TABLES	v
LIST OF FIGURES	vii
LIST OF APPENDICES	viii
INTRODUCTION	1
CHAPTER	
I. VOCATIONAL EDUCATION IN CHINA	4
High School	5
Vocational Education	7
Social Status of Vocational Education	16
Early Development of Vocational Education	19
II. A PILOT STUDY: INTERVIEWS WITH STUDENTS	28
Approaches to Schools and Students	29
Setting the Stage: the <i>Luyou</i> School	32
Who Attends Vocational High School?	37
The Meaning of Vocational Education	45
III. THE QUESTIONS TO ANSWER	59
IV. SURVEY METHODOLOGY	62
Sample and Participants	62
Survey Instrument and Measures	68
V. RESULTS AND DISCUSSION	76
Differences across Schools	77
Adolescents' Optimism and Self-esteem	89
Engagement in Vocational Education	98
Effects of Social Support	102
Relations between Social Support and Optimism	114

VI. CONCLUSION	120
Characteristics of Vocational Students	120
Relations between Education and Optimism	122
APPENDICES	126
BIBLIOGRAPHY	147

LIST OF TABLES

Table

1.1	Enrollments in Secondary Education in China	8
1.2	Vocational High School Enrollments in China from 1949 to 1995	10
4.1	Percentage Distributions of Students by Vocational Specialization, Gender, Income, and Parental Education	64
4.2	Descriptives of Student Characteristics by Vocational Specialization	67
4.3	Scales and Corresponding Interview Items	70
4.4	Means, Standard Deviations, and Reliability of Indices	74
5.1	Means and Standard Deviations of Optimism, Engagement, and Perceived Utility of Education	79
5.2	Means and Standard Deviations of Perceived Support from Parents, Teachers, Peers and Society	82
5.3	Means and Standard Deviations of School Effects	85
5.4	Means and Standard Deviations of Perceived Utility of Education by Vocational Specialization	87
5.5	Multiple Regression Analysis of Adolescent Optimism among Chinese Vocational Students	93
5.6	Multiple Regression Analysis of Adolescent Self-esteem among Chinese Vocational Students	97

5.7	Multiple Regression Analysis of Educational Engagement among Chinese Vocational Students	100
5.8	Multiple Regression Analysis of Adolescents' Perceived Utility in Vocational Education	105
5.9	Students' Views About Influences from Parents, Teachers and Peers on Their Career Choice	109
5.10	Correlations of Teachers' Ratings with Students' Self-Ratings and Test Scores	112
5.11	Family Characteristics and Parental Influence on Career-Related Decision Making	114

LIST OF FIGURES

Figure

5.1	Linking Educational Success to Psychological Success: A Structural Model for Vocational School Students	117
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LIST OF APPENDICES

Appendix

A: Means and Standard Deviation of Measures in Indices	127
B: Student Interview	130
C: Student Questionnaire	135
D: Student Questionnaire (Chinese)	140
E: Teachers' Ratings	145
F: Teachers' Ratings (Chinese)	146

INTRODUCTION

One of the most difficult questions facing young people in many contemporary societies is how to successfully make the transition from school to work (cf. Dore, 1989; Lauglo & Lillis, 1988). This is an especially acute problem in the People's Republic of China (PRC), a society that is undergoing accelerated social and economic changes (China Education Committee, 1996). To aid the tens of millions of Chinese adolescents of ages 16-17 in coping with the transition as well as the many social and psychological challenges associated with the transition, a large portion of China's secondary education is devoted to vocational training. Providing vocational education is a key component of the Chinese reform policy on education, and the government has set the goal of enrolling 60% of its high school students in vocational schools by the end of this century (People's Daily, 1997).

However, the effects of attending vocational schools on the psychological adjustment of students--often the less successful ones--are more complicated than a change in the employability of the youth, especially in a culture where high value has been placed on academic achievement. On the one hand, academic achievement is the single most important goal for Chinese students in all levels of schooling (cf., Mu, Stevenson, & Lee, 1997; Stevenson, Lee, Chen, Lummis, Stigler, Liu, & Fang, 1990; Mu, Lee, Stevenson, Fang, & Liu, 1996). On the other hand, some parents may view attending a vocational school as a degraded means of schooling because of its lack of focus on academic achievement and because enrolling in a vocational school leads to few prospects for additional education in the future.

Learning why these low-achieving adolescents successfully complete vocational education and how they adjust to adult life requires a careful study

of the contexts of their schooling and their experiences in school as well as at home. A better understanding of the factors that encourage some Chinese youth to perceive worth in themselves and complete vocational school is potentially useful to Chinese educators and policy makers. It also is of value more generally for the need for vocational education is being acknowledged in many countries in the world. Thus, the Chinese experience with vocational education has broader implications and relevance for more than China.

Despite the increasingly dominant roles of vocational education in young people's lives (cf., Raspberry, 1991; Reubens, 1974), research on low-track adolescents' well-being has generally been ignored. There is minimal research on adolescents' attitudes and feelings about their social status, their schools, their training, and their future. Research based on vocational students in the United States focus more on the maladjustment than achievements of adolescents. American students in vocational programs or concentrating on vocational courses tend to be less successfully adjusted in school, communities, and their adult lives after school (cf., Gamoran & Mare, 1989; Oakes, 1982). Vocational education in American high schools is accompanied by high drop-out rates, low employability, a lack of motivation to learn, lowered self-esteem, and little sense of achievement (e.g., State of Michigan Education Department, 1985; Oakes, Gamoran, & Page, 1992; Munson, 1992; Windish & Lester, 1987).

The central objective of this dissertation study is to examine the influences of school, family, and societal milieu on the psychosocial experiences of Chinese vocational school students. In particular, this study attempts to discover factors that are responsible for sustaining a high level of self-esteem and high motivation for achievement among vocational students. The study is also concerned with the investigation of the mediating roles of

vocational schools' direct link to jobs on students' motivation and adjustment in school.

Chapter I presents a description of the structure of vocational education in the People's Republic of China and establishes the cultural context for the study. Chapter II describes the views of vocational students about their education and future, drawing qualitative data from pilot interviews with two dozen vocational school students and teachers. Chapter III summarizes the questions to be explored in the research concerning the relationships between social contingencies (e.g., school climate, family milieu, and peer values as perceived by students) and students' motivation for studying in vocational school and self-esteem. Chapter IV presents the methodology for the survey of vocational school students. Chapter V is devoted to results and discussion on the effects of vocational specialization, parental values, and school values on students' engagement in vocational education and their psychological attributes.

CHAPTER I

VOCATIONAL EDUCATION IN CHINA

Introduction

Formal schooling in the People's Republic of China is uniform because schools are mainly a state-run system. Curriculum differentiation does not begin until the end of the general education required of all children from ages 7 to 15. To understand the potentially stressful experiences that 15-year-olds face when they must choose attending an academic school or a vocational school, one needs to realize that the preceding years have been a largely egalitarian experience for most Chinese students. In elementary and middle schools, all children study the same curriculum, read the same textbooks, and engage in similar activities in school for nine years.

Although there is nearly universal attendance at elementary school in China, slightly more than 90% of 13-year-olds nationwide continued to study in *chuzhong*, a three-year middle school or the three lower grades in a high school (China Education Committee, 1996). Low enrollment in middle school mostly occurs in some rural areas where educational facilities are limited and the need for financial help from the children to their families remains high, thus many rural children do not continue to attend school after they finish elementary school. In most cities the middle school enrollment is also nearly universal. According to the Chinese government, the enrollment in nine-year compulsory education has risen to 88% of all children of ages 7 to 15 (People's Daily, 1997).

Middle school students receive three years of common education, and once again, their lives at school are largely alike. Students study standard textbooks and follow the same curriculum for the core academic subjects, including mathematics, Chinese, physics, geography, and history. A course on

vocational guidance is required of all middle school students in their second year (Shi, 1991). The vocational course introduces students to the general knowledge about vocational attitudes, preparation for employment, categorization of occupations, and psychological theories on vocational personalities, such as Holland's six-dimensional model (Shi, 1991).

High School

The experiences in high school are largely different depending upon which type of school attended, and, in the case of vocational schools, the type of work for which the school prepares the students. After middle school students face an important choice of education, one which will exert a great impact on their future. For many it is not a choice to make, but an outcome to accept, for admission to the subsequent three years of secondary education largely depends on the scores obtained on an entrance examination administered by provincial educational authorities. The choice is primarily between a regular academic education and a vocational education. The clear-cut contrasts between these two types of high schools in China seem rigid compared to the comprehensive high schools in the US, which offer many selections for students of different abilities. American middle school students are not rigidly tracked into separate schools at age 15 and the chance for students to go to college continues to remain open to everyone (Fetz, 1984).

Many other societies adopt a approach to tracking after middle school similar to that in China. For example, in Japan, based on their entrance exam scores students are placed in different types of high schools after middle school, including competitive private and public high schools, day-time

vocational schools, agricultural schools, and night schools (Rohlen, 1983). The German vocational education had the earliest influences on the operations of Chinese vocational schools. In both countries, vocational schools are separated from regular academic schools, with vocational education maintaining close ties with work and academic schools preparing students for college (Hamilton & Lempert, 1996).

Enrollments in high schools. High schools in China, academic and vocational, selectively accept graduates from middle schools--unlike the U.S. or Japan, where all middle school students are expected to continue to stay in school through age 18. In 1995, approximately half (48.3%) of graduates from Chinese middle schools continued to enroll in some form of secondary education (State Education Committee, 1996). The low percentage is again mainly due to the low enrollments in the vast rural areas. Enrollment rates in urban school districts ranged from 80 percent (e.g., the cities of Wuhan and Chongqing) to 95 percent (such as the cities of Changchun and Shenzhen), including about 90 percent in Beijing.

Of those middle school graduates who continued to study in high schools 56% are enrolled in some form of secondary vocational schools and the rest in regular academic high schools, where students receive a general academic education. Many students may feel that their chances of passing the college exams are slim, so they are not motivated for three years of stressful life in high school. Others may view working as a more desirable thing to do after high school than to obtain more education. As a result, they choose to attend a vocational school instead of a regular high school. Many more students want to go to an academic school than can be admitted and, therefore, have no other choice but to attend a vocational school or to drop out.

For whatever reason these adolescents find themselves in a situation they have never encountered before because employment presents them with new views of their social worlds. Academic schooling tends to confine adolescents to a small social world in which they interact with students in school and parents at home. Students are typically insulated from socializing with members from other social institutions, such as companies, governments, services, and entertainment. A vocational education helps adolescents make the necessary adjustments upon moving from school to work.

Vocational Education

To receive a vocational education, middle school graduates need to go to a vocational high school, a specialized secondary school, or to a workers' school. Table 1.1 presents a sketch of the enrollments of these various forms of vocational education compared with regular academic high schools. As we can see, vocational high schools accepted one in two students who choose to enroll in vocational education. The vocational high school enrollment witnessed a ten-fold increase in the number of students from 1980 to 1995 (see Table 1.2).

Vocational high schools. Vocational high schools (*zhiye gaozhong*) are the largest form of secondary vocational education in China. For example, of the 74,000 middle school graduates in Beijing in 1995, 35 percent went to vocational high schools (37 percent went to regular high schools and the remaining 30 percent went to other forms of vocational education or left school). The mission of these schools is to train skilled workers for the emerging services and consumer industries, which is believed to be producing

TABLE 1.1
ENROLLMENTS IN SECONDARY EDUCATION IN CHINA

	Chinese Name	Schools	Enrollment (thousand)	Entrants (thousand)	Percent of Secondary Education
Vocational high school	职业高中	8,612	3,786	1,612	26%
Regular high school	普通高中	13,991	7,132	2,737	44%
Other vocational schools					
Specialized secondary school	中等专业	4,049	3,722	1,175	18%
Skilled-workers 'school	技工学校	4,507	1,886	741	12%

Sources. State Education Commission. (1996). *Educational Statistics Yearbook of China*. Beijing: People's Education Press.

Note. Graduates from middle school only. These specialized secondary schools also recruit high school graduates, comprising about 15% of all entrants. Similarly, the figures for vocational high schools in this table only included high school students. Some national statistics on vocational high schools often included the small number of lower-grade vocational high schools, and thus presented somewhat larger figures than here.

most of the new entry-level jobs in China's urban areas. Students are expected to work after they graduate in the occupation for which they have been trained.

The operation of vocational high schools reflects a critical shift in China's economic policies from a formerly state-planning economy to one driven by the market. These schools have the greatest autonomy among all forms of schools in their sources of funding, criteria for recruiting of students, design of curriculum, and placement of students in jobs. Governments provide a small amount of public money. The schools charge hefty training fees to companies who hire their graduates. They are also permitted to run their own training businesses to generate funds for operating the school. Students pay tuition and fees, and the amount can vary, depending on the nature of the training. Usually, the higher the employability of the specialization is, the more the school charges its students.

The field of specialization of a vocational school determines the design of its curriculum. For example, a tourism school offers such majors as hotel management, tour guiding, and food preparation.

Vocational curriculum. Since the functions of vocational high schools are centered on preparing students for employment after high school, a large part of the vocational curriculum is devoted to training students to meet the requirements of the target employment positions. Students spend about two years studying textbook knowledge in their fields of occupations, in which more than 50 percent of the time is spent in studying vocational knowledge, and the rest on the basic academic studies such as mathematics and Chinese. Vocational knowledge is the type of knowledge related to what students will need to perform in their future jobs. Many schools have a more general

TABLE 1.2
VOCATIONAL HIGH SCHOOL ENROLLMENTS IN CHINA FROM 1949 TO 1995

	Regular H.S. Enrollment (thousand)	Vocational H.S. Enrollment (thousand)	Vocational H.S. As Percent of All High Schools	Vocational H.S. As Percent of Vocational Education
1949	2,072	0	--	--
1978	15,531	0	--	--
1980	9,698	319	3%	14%
1985	7,411	1,843	20%	44%
1990	6,047	2,471	29%	41%
1995	7,132	3,786	35%	46%
1998*	7,000	6,000	46%	50%

Note. Other vocational enrollments include those at specialized secondary schools and workers' schools.

* Projected.

vocational course that instructs students in social skills, business practices, labor problems, and management and production regulations, etc.

Vocational majors offered in most vocational schools typically conform to the official categories of occupations. There are eight primary categories according to China's classification of occupations: professional and technological, government and organization management positions, administrative staff, business and trading personnel, service personnel, agricultural laborers, transportation workers, and the uncategorized. Schools typically offer courses specializing in skills related to one of the above occupations.

The instructors of vocational courses receive training from numerous state-sponsored training centers for vocational teachers. A head teacher is often assigned to a class of students during practicum, who acts as the liaison between school and the work place and serves as the evaluator of students' performance at work. It is usually the school's responsibility to arrange practicum places for students, which are either local businesses that expect to hire graduates from the school or school-owned training businesses.

Student interns in a practicum learn the operational skills at various training locations. The length of practicum varies from a few months to two years, depending on the nature of the occupation. The majority last for a year, and usually take place in the last year of the program. The practicum is similar to the apprenticeships in German vocational programs, where students learn under close supervision of the company (cf. Hamilton & Lempert, 1996). In both systems, student trainees attend vocational school half time and work half time in a firm. Employers absorb the costs of at-work training; state governments or schools pay for schooling.

There are two major structural differences between the German and Chinese systems. One is that in most cases Chinese students study coursework full-time in school for the first year or two, and then work full-time at the company during the practicum year, which is usually the very last year of the program. In contrast, German students alternate between school and their work place on a daily or weekly basis. Another difference is that German students often choose to enter an apprenticeship of a profession themselves whereas in Chinese schools are directly involved with the arrangement of practicum sites and practicum teachers assigned by school are responsible for evaluating students' performance. The flexibility in the German vocational programs allows students from academic high schools to participate in apprenticeships. About one in five of Gymnasium students hold apprenticeships. This kind of flexibility does not exist in Chinese high schools. No students in Chinese academic high schools participate in any practicum.

There are even more differences in the content of vocational education between China and the United States. In the US, fewer than 7 percent of high schools are specialized vocational schools that credential secondary students for particular professions (Office of Vocational and Adult Education, 1993). More typically, vocational education is provided in the comprehensive high schools, where students can concentrate on vocational courses (Grosso, 1979). This curriculum differentiation often benefits the most able persons because they get to study more challenging, advanced contents in classes composed of students of similar levels of academic ability (Oakes, Gamoran, & Page, 1992). The placement in vocational tracks in American high schools is rarely intended to provide a more specified, focused vocational training targeted at future employment opportunities. It rather serves to eliminate slow students

from the mainstream courses so that the school can be more focused on routing the other students toward colleges. The education of vocational students in American high schools is largely ignored, which presents a sharp contrast with the instrumental roles of vocational high schools in the school-to-work transition for Chinese adolescents.

Academic curriculum. Academic education is also provided in vocational high schools, but with a reduced version of that offered in regular high schools. As they enter the school and continue, vocational students find that the academic curriculum is largely comparable across schools while the vocational courses differ greatly depending on their fields of training. Mathematics, Chinese, and politics are taught in all vocational schools because they are the academic subjects required by the State Education Committee. The State Education Committee publishes curriculum guidelines and the provincial education commissions prepare the textbooks.

The academic curricula are significantly less difficult than those of regular high schools. For example, mathematics is a required major academic courses in all high schools in China; however, regular schools adopt a three-year curriculum for mathematics compared to a 2-year mathematics curriculum used in most vocational schools as prescribed in the national guidelines published by the State Education Committee. The same academic concepts and principles are often introduced with a strong emphasis on applied settings and real life examples in the vocational curricula (China Education Committee, 1996; Chinese Vocational Education Society, 1987).

Depending on the needs of training, some schools may offer extra academic courses besides mathematics, Chinese, and politics. A tourist school may offer courses in foreign languages such as English and Japanese; a business and trade school may offer courses that demand comparatively

proficient academic skills in areas such as accounting, information management, and programming; food processing schools may offer courses in biology and chemistry to supplement their academic curricula.

Outcomes of students. Because employment is the primary goal of vocational students, student outcomes in vocational schools are measured by employment rates and starting salaries on the jobs rather than college admissions. Schools need to come up with ideas to enhance their students' employability. A typical vocational high school accomplishes this goal by two means. The most common is to work out advanced contracts with companies that are interested in hiring the students. These contracts allow the school to receive fees for recruiting and training the students as prospective employees for the companies. The students often complete their practicum at the company and are hired as formal workers if their experience in their practicum is successful. Another frequently adopted means is that the school jointly runs programs with a company. Sometimes the entire school is financed and run by a company and the school and the company jointly design the vocational curriculum.

There are also other ways of finding jobs. Job fairs are an important labor market organized by the local government's labor offices once or twice a year, where students can submit resumes to or initiate direct contacts with prospective employers of their own choice. These job fairs provide an opportunity for students who are not assigned a job by the government or school as well as workers who want to change their current job. Technical qualifications, social skills, a diploma, and personal connections help in landing a good job at these job fairs.

Other forms of vocational education. Two other forms of secondary vocational schools are open to middle school graduates: *zhongzhuan* or

specialized secondary schools and *jixiao* or skilled workers' schools. These vocational schools are separate educational entities from high schools. They are run entirely by the government as the finance, the recruitment of students, and content of the curriculum, and the jobs of the students are virtually taken care of by government agents or state-run enterprises that are in charge of the specializations. A textile technical school, for instance, is under the control of the Ministry of Textile Industries, and the school's graduates are assigned a job by the Ministry at one of its offices or enterprises. These schools remain as part of the government-managed economy whereas vocational high schools are given greater autonomy in running the school on their own.

The majority of the students in specialized schools are recruited from graduates of high schools; the ratio of graduates of middle school to first-year high school enrollment is approximately 1 to 3 (China Education Committee, 1996). These schools mainly train students to work as technicians in government offices or state-run industries. The major sub-specializations of the technical schools in terms of student enrollments include industry (40%), health care (18%), accounting and trades (17%), and agriculture (12%). There are also thousands of teachers' schools that train students to be teachers in kindergartens or elementary schools. About 70% of all the specialized secondary students are enrolled in some type of technical school, and the remaining 30% are enrolled in a teachers' school. Since the students in these specialized schools are often high school graduates, these schools are not comparable to regular academic high schools despite the fact that they are considered to be a form of secondary education.

The schools for skilled workers are usually run by large state-owned companies and serve to train their entry-level employees. For example, the Anshan Iron and Steel Co., one of China's largest state-owned companies with

168,000 employees and adding 3,000 to 4,000 new workers each year, operates its own workers' school (China Department of Labor and Personnel Bureau of Employment, 1986). The school annually trains some 1,500 prospective employees in ten occupational areas. Students in the workers' school must work as apprentices in various positions in the company for a year to fulfill the internship requirements. Students in workers' schools have an advantage in applying for positions related to their career area because they have received the training specified for their occupation.

The ages of the majority of the students in workers' schools are comparable to those of regular high school students. There is an especially strong negative social evaluation attached to many workers' schools. These schools are apparently the last choice for secondary education of Chinese adolescents, exceeded by the desirability of regular high schools, specialized secondary schools, and vocational high schools.

Social Status of Vocational Education

Research on adolescents in many places including the United States indicated that the socioeconomic status of families is associated with track placement with high levels of parental education usually leading to placement of students in higher tracks (Dornbush, 1994; Furlong, 1993; Jennings, 1991). Children from families of low socio-economic status are more likely to be on vocational track in some other cultures too. Family and school environments not only constitute the most important sources of influence on the development of social skills (Darling & Steinberg, 1993; Minuchin & Shapiro, 1983), but can also exert influences on adolescents' aspirations for careers. A study of British high school students' career plans revealed a strong

depressing effect of social class on students' occupational aspirations (Furlong, 1993). Among the highest achieving students, those from lower social class backgrounds tended to under-aspire, while among the lowest achieving students, middle class children tend to be more ambitious than their working class peers .

There are reasons why many Chinese parents and students may be ambivalent about attending vocational high schools. Two conflicting sources of influence on the social views of vocational education exist in contemporary China: the enduring traditional stress on academic achievement and the recent respect for skills relevant to the market economy. The traditional view tends to undermine the value of vocational education, whereas the recent economic reforms have created a social climate that tends to value the kinds of vocational skills that are adapted to the needs of the market.

In the past, academic education enjoyed the highest respect and yielded the greatest socioeconomic rewards, and government officials were often selected from scholars who demonstrated a high level of academic achievement in such skills as composition. A central objective of attending regular high school is to prepare students for college and the college entrance examinations three years later. Academic achievement remains as the most important criterion for entering a college, and thus is considered by parents and students as the single most valued goal of education for students.

To many parents and students, vocational schools are associated with negative social values. It is not unusual to hear people talk about vocational education as the "garbage ground" for problem adolescents. Thus, it is likely that some vocational students, surrounded by these negative social views, may be unable to sustain a high level of self-esteem and a sense of achievement.

The other side of the situation, however, appears to be of benefit psychologically. Because their vocational skills are attuned to the needs of the market, their prospects for employment look good and may continue to look good as the market economy keeps growing and diversifying. The demand for vocational high school graduates is especially high in China's current economy. According to China Department of Labor and Personnel Bureau of Employment (1986), among all jobs in China about 50 percent are in agricultural industries (e.g., farming, fishing, and logging), about 25 percent in various manufacturing industries (e.g., mining, garment industries, electronics, pharmaceutical industries, and construction), and the remaining 25 percent in service and distribution industries (e.g., tourism, retailing and distribution, office and secretarial services, business management, and post and communications). College graduates make up only about 5 percent of the work force.

Few vocational skills are learned in regular high schools except for a single course on general vocational guidance in the first year (Shi, 1991). The content of this general vocational course looks much like a psychological and vocational counseling course, with no coverage of knowledge about specific occupations. All the regular schools operate in accordance with the uniform guidelines published by the State Education Committee and receive funds solely from central and local governments. Students' experiences are very much alike from school to school. They follow the same curriculum, read the same textbooks, and prepare for the same national exams. The only activities students have time for in the last year besides studying are sleeping, eating, and commuting between home and school (Liu & Guo, 1993). It is typically a highly stressful experience for the students. The academic pressures from the

school, parents, relatives, and peers, however, often occur to stifling degrees for these able adolescents in the last few months (Li & Gao, 1993).

Vocational high school students, with a high school diploma and a vocational training certificate, often experience an easy time in finding good jobs. Many vocational high schools are of special interest to fast-growing urban industries that tend to create many high-income jobs in the cities, and thus are attractive places to go for many young people.

If students in vocational schools perceive a clear utility in their education and downplay the meaning of academic achievement in their lives, they may fare well psychologically. But it is also possible that to some parents and students, no matter how well a vocational school is run, it is after all a vocational school, attended by students displaying low levels of achievement.

To better understand the status of vocational education, a historical review of the development of vocational education and the roles it played at different times is helpful.

Early Development of Vocational Education

The PRC has undergone rapid changes in its socioeconomic systems over the past decade, and the expansion of vocational education has caused marked reconfigurations in adolescents' views, beliefs, and choices. These changes also pose a challenge to Chinese parents as they must cope with the transitions along with their adolescent child. Few of these parents had any experience themselves with vocational education, and seldom did vocational education ever play a critical role in society.

Before 1950s. The availability of education to ordinary Chinese citizens is a relatively recent phenomenon. It began during the first decade of this century, when, influenced by the contemporary Western and Japanese educational systems, a national school system was formed (China Education Yearbook Committee, 1992; Swetz, 1978). Education became a matter of national concern, however, only after 1925 when the Nationalist government began the nationwide implementation of educational reforms formulated by American-trained scholars, including many disciples of John Dewey. Amidst the reforms, the first vocational schools were opened to train youth for industrial work.

The history of vocational education in China can be dated back to 1917, when a few elite intellectuals (led by Huang Yanpei) and industrialists founded the Chinese Association of Vocational Education (*Zhonghua Jiaoyu Zhiye She*) in Shanghai, perhaps marking the beginning of Chinese vocational education. This non-governmental organization funded the first vocational schools, such as The China Vocational School, The China Industry and Business Specialized School, and The China Vocational Prep School in Shanghai, Kunming, Chongqing, and Nanjing. Some 120 journals and books such as *Education and Careers* were devoted to vocational education. Most of these early schools trained skilled employees for emerging industries such as banking. But at a time when the nation's literacy rate was below 10%, secondary education, vocational or academic, was reserved for youths from the most well-off, elite families. The influences of vocational education on the economy and the lives of youth were largely isolated and minimal.

Early 50s. At the time the People's Republic was founded, China had a total of 1,597 upper secondary schools and about 440,000 students (compared to 14 million in the early 1990s). Vocational education was provided in 1,171

specialized secondary schools and in 4 workers' schools, which enrolled fewer than a quarter of a million students. Compared to its size in the 1990s (see Table 1.2), these early figures are minimal, even considering that China's population was less than half of what it is today. Thus, only a very small number of young people had the privilege of attending a vocational school in late 1940s.

The Chinese Association of Vocational Education continued to organize various forms of vocational and part-time educational activities. For example, in 1951 it collaborated with the China Union of Education to open the first part-time correspondence school for teachers. In 1962, it started the China Correspondence School and gave seminars on language and literacy to participants nationwide (Chinese Vocational Education Society, 1988).

The major force behind the development of vocational education has been the Chinese central government. The 1951 national conference on secondary vocational education outlined the nation's first blueprint for rebuilding its vocational education in order to produce a large number of skilled workers and technicians to meet the needs during the country's early development (Central Institute for Education, 1988). There was a slow, but steady increase during the following decade in secondary vocational enrollments. By 1957, the year before the Great Leap Forward, China had 1,320 secondary vocational schools, the majority of which were specialized secondary schools. According to official documents, the government placed emphasis on the development of regular high schools as well. Vocational school enrollments rose to approximately 300,000 students during the first Five-Year Plan (1953-1957), compared to three million in regular high schools at the same time (Central Institute for Education, 1988).

Chinese education experienced distorted, unrealistic growth under the unprecedented influence of some radical ideologies. Every factory, farm, community, and government office was allowed to establish and run its own university, vocational school, high school, elementary school, and kindergarten. Some of the most inflated and oftentimes false statistics on all sorts of achievement floated around the country. A 1958 *Guanming Daily* published the following statistics on education: 6,000 vocational schools, a 220% increase in student enrollments from last year, the opening of 800 new colleges and universities, and the like.

After normal political situation was restored in early 1960s, the size of various forms of education was scaled down to pre-1958 levels. Some 1,500 secondary vocational schools remained open in 1962, but the number continued to decrease. There were 1,265 formalized vocational schools in 1965, a year before the Cultural Revolution (1966-1976). In 1963 the Ministry of Education published *Secondary Specialized Schools Catalog of Specializations*, listing 347 specializations in the following eight categories: industry (242), agriculture (25), forestry (11), medicine (12), teacher training (2), accounting (34), sports (1), and arts (20). The contribution of vocational education to society became visible because a relatively large number of students graduated from vocational schools and began occupying some of the middle-level management and technical positions (China Vocational Education Society, 1988). Enrollment in all forms of secondary vocational schools was around 800,000 in the early 1960s. However, this was a small number compared to the seven million in regular high schools in the same year.

Official statistics showed a dramatic growth in secondary school enrollments in early 70s. There were 120,000 secondary schools enrolling 45

million students. At the same time, however, the number of students in vocational schools never grew over 1 million.

The early history reveals a marginal influence of vocational education on adolescent life due to the limited enrollment. The most desired pathway for a successful young person had been a general education followed by college, despite only a fraction of students are accepted by colleges. Vocational education in high school remained largely unknown to many parents and adolescents until the early 1980s.

The reforms in the 80s. The economic reforms in early 1980s gave China a chance to study the economic achievement in Western countries. One of the most significant impacts on Chinese vocational education was the introduction of the German prototype of vocational education after the establishment of a German-sponsored vocational education center for architecture in Nanjing in 1982. This center was soon followed in many Chinese cities by reforms in their vocational schools (Liu, 1992).

Accompanying the economic growth, vocational education expanded rapidly. The number of vocational schools increased to 16,237 in 1991, up from 6,300 in 1980. The number of enrolled students went up to over 6 million in early 1990s from some 2 million before 1980 (China Education Committee, 1996). As explained earlier, the rise in the enrollment at vocational education reflects mostly an increase in the enrollment at vocational high schools.

An examination of the operations of the reforms reveals that vocational education was partly treated as a dumping ground for low-achieving adolescents. Nationwide school reforms transformed tens of thousands of regular high schools into vocational high schools. These schools were exclusively the ones that had none or only a handful of students who went to

college. They were selected and mandated by the government to open vocational classes and incorporate training programs in response to the growing service and electronics industries.

Technical colleges helped these schools train teachers for vocational instruction. The transformations proceeded swiftly across the country despite the fact that vocational schools were apparently a place for the least academically successful adolescents. The promise that vocational education would enhance job opportunities lured many adolescents who otherwise could not enter a college and therefore would have a much smaller chance of landing good jobs. Within two to three years, some 15,000 regular high schools nationwide that did not produce sufficient percentages of qualified candidates for higher education were reconfigured to become vocational schools.

To guide the transformation, the central and local governments' education committees published various curricula for vocational training so that individual schools could choose the one from among these curricula that best met the needs of their local market for skills. During the following years, vocational education programs replaced a great deal of the regular academic content in the curriculum and they now occupy more than half of the instruction hours. Further development of occupational differentiation in China led many vocational schools to introduce more and more specialized programs into the curricula, and thus became more suited to the needs of the market.

According to official statistics, the unemployment rate in China's cities and towns is hovering around 2-3% (People's Daily, 1995). The hidden unemployed population in cities may run twice as much due to the recent massive lay-off of workers by state-run enterprises and the continuing flow of farmers from the countryside to cities looking for work. With few of the skills

needed in an urban economy, farmers have experienced great difficulties in finding secure jobs in cities. These new workers are the most numerous sources of labor in urban areas, but they do not master the skills involved in the types of technical or service jobs held by workers trained in vocational schools. Thus, graduates of vocational schools are to be favored in China's urban job markets. According to the estimate of a Chinese authority on vocational education, approximately 95% of vocational high school graduates have been able to find jobs or gone to post-secondary institutions, such as vocational colleges by the time they finished (personal correspondence). High school graduates with no vocational training will often find themselves in a disadvantaged position in competing for better employment opportunities compared to vocational school graduates. The stigma of vocational education was fading.

Another major reason why China moved a vast number of its high school students into vocational education lies in its limited capacity in higher education and the great excess of high school students. Chinese universities were able to accommodate only a fraction of the applicants each year (below 10%). The placement of a large number of students in vocational education reduced the competition for the limited college quotas. Colleges and universities on the average now accept one in every three applicants, down from one in five some ten years ago.

Summary

The majority of Chinese adolescents attending high schools are enrolled in vocational education as a consequence of the recent economic and education reforms. But history shows a marginal, secondary status of vocational education in Chinese society, and few parents and adolescents

viewed it as a desirable life path. On the one hand, it is true that low achieving adolescents are more likely to end up attending vocational schools, and have to cope with whatever views the society holds on vocational education. On the other hand, it opens up social worlds for these young people and provides them with enhanced opportunities for employment. These conflicting features tend to characterize the social context in which low-track adolescents adjust to school in this rapidly changing society.

Despite the structural success in vocational education in China, there are few reports of how vocational students feel about their education and how they view their future. We know very little about the students' attitudes and motivations and the meaning of vocational schooling in their lives. It remains unclear how these adolescents cope with the idea that vocational education is for the ones with low-ability.

To develop a well-grounded interpretation of the socioeconomic features of vocational education and the meaning of vocational school to the millions of Chinese youth, a pilot study became necessary. One avenue for exploring students' attitudes about vocational education is to interview a sample of vocational school students and their teachers about how students view the status of vocational education, the usefulness of the training provided by their school, and students' future plans. The interactive nature of interviews allows in-depth probing for domains of questions that were not thought up previously.

The purposes for conducting pilot interviews were 1) to learn about individual differences in their experiences with vocational schools and how students themselves view vocational education in comparison to regular academic education, 2) to discover factors that may influence students' choice

of and experience with their education, and what makes the students to continue with their vocational education, 3) to learn about differences among schools and what schools can do to help students make their vocational training more successful in terms of both later employment and psychological outcomes.

CHAPTER II

A PILOT STUDY: INTERVIEWS WITH STUDENTS

Introduction

In this chapter I will describe what vocational school means for vocational students themselves and how schools can be good for underachieving, unmotivated students. Formal and informal interviews were conducted with students and teachers attempting to find out why some students have made a more successful adjustment in vocational schools than others, despite rather poor academic work and often negative experiences until this point. I attempt to document the common themes in the life and school experiences of vocational school students.

Research that has been completed on Chinese students has generally treated Chinese students as a homogeneous group that is uniformly motivated for and devoted to school achievement. This approach successfully characterized the academic achievement and motivation when Chinese students were compared with students in other cultures, especially among elementary school students (e.g., Stevenson, et al., 1990). As seen from the discussion on the structure of Chinese education in the previous chapter, however, differences among schools tend to characterize Chinese secondary education. Therefore, I also hope to convey some of the differences I found among schools and students, especially in students' employment opportunities, the content of their vocational education, their motivation for learning vocational knowledge, and their views about present and future.

Issues to explore. Four specific research questions were probed in the interviews. First, what kinds of students attend vocational schools in terms of the socio-economic status of their families, their academic performance and

educational aspirations, and their views about work? Second, what does school mean to low-achieving adolescents? I sought to know about students' general attitude about education, the content of knowledge and skills they learn in school, and how schools are related to jobs. Another goal was to discover what makes some vocational schools more successful than others in producing desirable outcomes, such as positive attitudes about school and work, feelings of self-competence and self-esteem, and high motivation for learning in school. The last question is whether the views of the students are strongly influenced by the views of their family members, friends, and teachers.

Approaches to Schools and Students

I visited schools and conducted the interviews in Qingdao, Shandong Province, a large metropolitan areas with a population of 2 million. There were some 80 vocational high schools in Qingdao with a total recruitment of approximately 15,000 students each year. This size of vocational educational programs was typical of most cities in China. The number of vocational high schools in some other cities was 53 in Guangzhou, 60 in Wuhan, 75 in Shanghai, 106 in Chongqing, and 174 in Beijing.

Schools. Five schools were visited, including four vocational and one regular high school. The four vocational high schools were recommended by local educational officials as adequately representing a representative range of good, average, and mediocre vocational schools there: a *lǚyou xuëxiao* or tourism school (six students and three teachers), a *shangye xuëxiao* or trade school (two students and one teacher), a *jiaotong xuëxiao* or transportation

school (three students), and a *shipin xiuxiao* or food processing school (three students).

The remaining three students and one teacher were from a regular high school in Qingdao, the No. 39 Secondary School, an average-level high school in terms of the quality of instruction and the competitiveness of its students.

The tourism school is considered by its school officials to be a popular vocational high school that often attracts more applicants than it can admit. The business and trade school attracts some of the more academically competent students because, among other reasons, they offer courses in computer programming. The other two schools were low rank vocational schools. The transportation school trains students for public transportation services. Since it is sponsored by the city's transportation authority, many of its students will work in public transportation systems after they graduate, primarily because it is often difficult to find jobs elsewhere. The food processing schools offer training in such areas as food preparation, examination, and distribution. One of the jobs students often take is food salesperson at supermarkets.

Students and teachers. Interviews were held with ten male and seven female students and three male and two female teachers. According to their teachers these students I interviewed were mostly average students in terms of school performance. All students were about to begin their second year in high school. They were 16 or 17 years old.

Among the five teachers, four were high school teachers, and one taught at a junior high school. Three taught in the tourism school, and the other taught in the same regular school attended by the three non-vocational students. The junior high school teacher had a lot of experiences in consulting

with parents at the end of the last year of junior high school when students needed to choose which school to attend.

The interviews with the three vocational school teachers followed a defined series of questions. The interviews with the other two teachers were less formal, and the teachers were asked to comment on a broad range of issues dealing with vocational education. The purpose of these informal interviews was to attempt to elicit views on issues and concerns that might have been neglected in developing the questions.

Procedures. All interviews were conducted in the house of my parents during in the summer of 1996. I followed a loosely structured scheme in presenting questions and I encouraged students and teachers to discuss their reactions and views in the following domains: the entrance exams at the end of middle school, factors that influenced students' choice of school, the social status of vocational education, the content of vocational training, the priorities, constraints, and options in vocational education from students' perspectives, student activities in school, students' views of their future employment opportunities, and teachers' views of vocational students' competence and their views about the roles of school in students' lives.

Most questions were open-ended and meant to elicit free-flowing responses (Appendix A: Student and Teacher Interviews). Spontaneous spin-offs were not immediately re-directed as long as the conversation dealt with issues related to the topic. The interviews typically ranged in time from about 40 minutes for a few individual interviews with students to over two hours for the interviews with teachers and some small-group interviews with students. Although one or two students often dominated the conversation during the group interviews, I found that others stated dissenting viewpoints. In many cases, students were asked to describe their own points of view first,

and then the views held by other young persons their age or by their classmates. I was always able to probe for their parents' views in addition to the students' personal views. Many interviewees allowed me to tape the conversation. A number of conversations were quoted from these tapes to provide illustrative examples.

The results from the interviews are presented in two sections: *Setting the Stage*, descriptions of the structure and functions of a vocational high school and *Meaning of School*, in which student and teacher responses are presented to illustrate what vocational school means for students themselves. The responses are organized into three themes: 1) who choose to attend and graduate from vocational schools, 2) the meaning of vocational education and students' adjustment, 3) status and future work.

Setting the Stage: The Lüyou High School

Of all the schools I visited, the Tourism School or Lüyou School provided the most detailed information and description of its structure of curricula and training. I visited this school and its training hotel several times to collect school brochures, student and employment statistics, information about the practicum and curriculum, and sample textbooks. The official name of the schools was Qingdao Lüyou School, a moderately successful vocational high school in the local area. It attracts adolescents who want to work in restaurants and hotels, a major business of the city (Qingdao Tourism School, 1996). The school offers training programs in seven occupational specialties, including hotel management, hotel service, service to international tourists, guiding tourists, food preparation, international accounting, and international business. At the time of the interviews, the

school enrolled approximately 1,400 students in 30 classes and hired 186 faculty and staff members to teach and train the students.

What makes The *Lüyou* School especially attractive to students and parents is that it operates a 150-room hotel that serves as a training and practicum center for its students. The entire service staff of the hotel is made up of student interns, from serving at the front desk to room maintenance. The hotel has a large dining hall on the first floor, where student cook interns prepare the meals as part of their vocational training. To regular tourists, the hotel looks no different from other hotels. The money it generates is used to finance the school. The *Lüyou* School also owns a parking lot in a premium downtown district and a publishing house next to its campus. Some funds have come, in part, from a Hong Kong service company with the goal of jointly developing a comprehensive training center for employees of its own hotels and restaurants. The remaining source of support is from public funding. Government finance to education is rarely sufficient, an especially acute problem for vocational schools. Vocational high schools often have a larger budget than regular high schools because of their expenses on the purchases of special equipment and tools in addition to study desks and workbooks. Therefore, vocational high schools are allowed to run tax-free business to finance themselves. The *Lüyou* School-run hotel is such an example.

Early Status as A Regular High School

It was clear that the *Lüyou* School has experienced many changes since it was converted to a full-time vocational high school. The school originated as a regular secondary school that offered only a general academic education. It first began to provide vocational programs in 1986 in its high school grades (ten through twelve) while retaining the lower grades (seven through nine) as

a regular academic program. The school was transformed into a vocational high school in 1990, accepting only graduates from the ninth grade. There have been personnel changes in the administration, but the entire academic faculty was retained.

Prior to the transformation, the school, like other academic high schools, offered the required curricula in mathematics, physical sciences, and language arts. The school's academic quality was so poor that only one or two of its graduates each year went on to college. Having a student go to college was once so highly regarded that it was described as launching a satellite into the sky. The majority of the school's graduates even failed the necessary qualifications for taking the national college entrance examinations. Fewer than a dozen students from 1985 to 1990 were ever accepted by a four-year college or a university.

Changes in curriculum after the transformation of the school were profound. Some teachers who taught courses that were no longer required, such as physics or chemistry, were sent to receive training in teaching vocational courses, such as employment orientation and business management. For mathematics and Chinese teachers, the teaching loads have been reduced because of the adoption of less demanding courses. The former three-year mathematics curriculum was cut down to two-years, leaving out much of the difficult content, such as calculus and solid geometry.

For foreign language teachers, stress has been placed on spoken skills rather than grammatical proficiency. Spoken English, for example, has been created as a stand-alone course for hotel services majors. The school has gained sufficient financial resources to hire native speakers to teach English. At the time of the interviews, Cambridge University students studying and traveling in China were hired as the instructors for spoken English.

The school no longer aspires to send students to college. The transformation has apparently propelled the school to reconceptualize its goals, requirements, and measures of performance as a vocational high school. The school's official booklet defines its goal of achievement as becoming the city's training center for a middle-level, skilled working force in tourism services.

Vocational Training and Practicum

The content of vocational education is highly specialized in the areas of work the students are trained for. Students spend their first two years out of a total of three years of high school studying both academic and vocational courses. Vocational courses are devoted to the learning of skills that match skills that will be needed in present-day workplaces. After that, a year of practicum was required of each student. During this time students work as interns in a company that specializes in their field of training. In most cases, the practicum is full-time and demands for a student's maximum involvement in the work. Students only report to school a few times periodically throughout the year. A practicum teacher was responsible for calling back students occasionally to discuss and evaluate the students' performance. The school-owned training hotel and restaurant were the main place for the students to complete their practicum hours.

The benefits students obtained from their training is reflected in their improved opportunities for employment. From 1990 to 1995, according to the school's records, about 94% of its graduates were able to find a job at the time of graduation. Some of the positions were at China's well-known places, such as the *Zhongnanhai*, the headquarters of the Central Government. I observed that the school negotiated directly with hotels and travel agencies about jobs

for their students. What it means to student is that completion of school is directly linked to a job. The school runs two hotel management classes with two hotels. Hiring decisions are jointly made by teachers and the employers. Employers usually hire all the students under the contract established in the beginning of the training program after an interview screening that serves to assign students to various posts in the hotel.

Generalizability of Lüyou School

I visited the other schools to assess the generalizability of information from the tourism school. The visits also allowed me to investigate the hierarchy of status among vocational schools. All the vocational schools were structured in a similar way in terms of schedule, class size, proportion of academic courses, and length of practical training. Teacher-teacher and teacher-student relationships seemed warm and close in these vocational schools.

In discussions with school officials and teachers and from reading school records, I learned that there are remarkable differences among these schools in such aspects as the schools' financial capacities and the employability of their students. The most frequently mentioned factor for placing a vocational school at the top rank was the opportunity it provided for future employment. These schools are sought after because they are often considered to be a better choice than mediocre regular high schools, and thus they are able to recruit adolescents who are motivated for work after high school. The tourism school was one of such successful schools in the local area. The business and trade school was the most academically demanding, and the other two were mediocre to low by any measures of quality. Some students in the transportation school are guaranteed a job upon completing

the program because of its affiliation with the local transportation authorities. The food processing school students are apparently at the bottom of the hierarchy.

Who Attends Vocational High School?

The second semester of ninth grade is a critical time for millions of Chinese students in lower middle schools. Every student I interviewed agreed that it was an important moment in their lives. Unlike in the US where every junior high student is expected to move from their junior high into a high school setting, the system in China does not allow students and their families to hold similar expectations. As noted in the first chapter, some 10-20 percent of students in urban middle schools will not be able to continue to study in high schools. The outcome largely depends on students' scores on a high school entrance exam. However, for the millions of students who may want to study in a vocational high school, the procedure begins before taking the exam. It begins with making a decision on which type of school to apply. This is a very difficult situation. I learned from the middle school teacher that teachers' opinions are crucial for students and their families to make the decision, especially for the students whose academic performance is on the borderlines.

Ms. Wang, the middle school teacher, described her experiences of being consulted by parents:

Almost every student's parent came to see me in the last week before the choice needed to be made. I based my advice mainly on the student's long-term academic performance and their graduation exam scores. I

would describe the likelihood that the student could receive scores on the exams high enough for a regular high school. In most cases, the parents followed my advice. Many parents tended to easily accept a teacher's recommendation. I often asked parents to seriously consider having their child apply to a vocational high schools when the student's academic standing was out of the top 10 (approximately 20% in an average middle school class with about 50 students). The bottom line is that even if they may be able to enter a regular high school, there is still a lot of competition for college three years later. That's what an academic education is all about.

Despite her unduly narrow view about academic education, it was echoed in the other teachers' experiences with the procedures, Parents usually made the choice based on teachers' recommendations; students' interests were in most cases secondary to their academic records in making the decision. Although students claimed that they themselves were mostly responsible for making the decision, most admitted that their choice was in accord with their parents' preferences.

Entrance Exam

After the decision is made, every student then takes the city-wide high school entrance examination. The exam is essentially a measure of academic performance up to the level of middle school or junior high school. It is usually composed of tests of mathematics, Chinese, and one or two other academic subjects, such as politics and English. The students' total scores on the exam determine which school they will get in. Apparently, one goal of the exam is to sort students. Although the teaching in middle schools never starts with the

goal of sorting students by ability level of students, it ends with sorting students into different levels of high schools. Except for some vocational schools that impose pre-screening requirements (e.g., a tourist school may require a face to face interview) before the student can apply, most high schools accept students based on the test score. Some popular vocational high schools are filled up as quickly as regular academic high schools. Students who fail to get into a regular high school are screened for a second chance by the vocational schools that have not yet filled their quota of students.

I asked students how they felt about the exam. I thought vocational high school students, when recalling their experiences with the exam, would consider it to be unfair and limiting their future chance. But students unanimously considered the exam to be a fair criterion for the sorting and did not realize that it may place a cap on top of their possibilities of future jobs. One vocational high school student described her feeling about the exam:

(the exam) it wasn't hard. I just did not do well. My grades weren't that good in middle school anyway. But I think it is fair that everyone takes the exam. What any other criteria would be more fair than this? I know some kids with a lower score got in a nice vocational school because of his dad's connection there. That's unfair. The exam is fair. Whoever gets a higher score goes to a better school. I may not go to a regular high school even if you let me go for free. I don't think I could stand that much stress there.

It struck me that despite their low performance on the test vocational high school students did not display a shattered self-confidence. One student even considered entering a vocational high school to be a success because

some of their friends did enter a school. The fact is, nevertheless, that the majority of students who choose to attend vocational schools are largely below-average in middle schools. It is wise for them to apply directly to a vocational school for these students may barely have a chance for getting accepted by a regular high school.

Roles of Families

Parental guidance for adolescents is high in Chinese families, especially in the domain of school performance. Parents are kept informed of their child's progress in school by teachers every semester. Students' scores (on a 100-point scale) are forwarded to parents twice a semester. There are parent-teacher meetings once every few months in most schools. Teachers also may initiate meetings with individual parents when the student is not keeping up with his or her lessons. Therefore, parents are well informed about their child's performance and standing in school. When it comes to deciding about which school to apply to, they are able to make an informed decision for their child. One in two of the students told me that they made the decision on their own, without any interference from their parents, although many thought it would be the best if their parents agreed with their choice of education. A closer look at their responses revealed that parents were highly involved in this process of choosing the right type of school, and their involvement may create an informed, supportive family process that is partly responsible for most adolescents' easiness in selecting a vocational education. The following opinions of a student expressed a common feeling about parents' role in the lives of adolescents:

They knew, and they cared to know my grades in school. Their opinions are always important to me. I don't think that we agree on everything, but we agreed on which type of school I would apply to ... It sure made a difference. I don't know about others' parents, my parents listened to me. I made the decision for myself, and they were opposed to me. I wanted to have their consensus with what I do. If they did not let me go to vocational school, I probably would have been somewhere else.

According to the teachers' accounts, many parents seek the teacher's opinion about their child's chance for getting into a regular high school. It was clear that parents are highly involved in the application processes, and they influence their child's decision. In fact, it is likely that the expectations of many parents are in line with their child's actual academic ability, thus making the decision simple. If the child consistently performed in the top of his or her class, both parents and the child would expect the child to go to a regular school with the ultimate goal of attending college. If the child consistently performed in the bottom of the class, the expectations are low, and a vocational education is likely the choice. Those with a borderline academic performance are likely to have a hard time in making the decision.

Socioeconomic status. Social class is a rather vague classification in today's Chinese society. The vagueness has mostly to do with the weak association between educational achievement and economic gain. The difference between working class and the professional or intellectual is largely reflected in their discrepant levels of education. While college professors, doctors, engineers, and scientists are more likely to receive more years of education than secretaries, workers, farmers, cab-drivers, and hotel attendants, there is barely any difference in terms of how much money they

make. I learned from my conversation with the students that few vocational students came from families with highly educated parents. Their families were apparently not poor by any standard. If a family's socioeconomic status is potentially a discriminator of the type of high schools students attend in China, it is more appropriate at present to measure the SES using parents' levels of education rather than family income.

Differences among Students

Vocational high school was the first choice of a large number of the students I interviewed. Ten out of the seventeen interviewees applied to vocational schools as their first choice and were accepted. These students believed that they made the right choice for several reasons. First, the students' expectations are low, but rather realistic; a vocational education is better than not going to any high school at all. Second, the knowledge and skills students learn in school are useful and directly linked to jobs, which tend to make students feel a sense of efficacy about themselves. The opportunity to socialize with people with varied experiences from a broader world accompanied by a lighter load of academic pressure also adds to the students' liking for school. Third, knowing their low academic records in middle school their parents likely expected them to go to vocational school, thus creating a parent-child congruence in the type of education the child chose. Such factors may explain why these students' experiences with their education in vocational high schools were largely positive.

One student from this group described her attitudes about her vocational education:

I applied to my present school directly and I was happy that I got in. I was pleased in the first place because I might not be able to go to any high school. I did not do well in middle school. I wasn't thinking of college at all. I may one day try that, but not now. I liked the idea that I can work after vocational high school. I don't want to stay on in school for too long. Maybe I will go to an evening school after I work for a while. But not now. Many of my middle school classmates went to a vocational high school. I like what I do now. I am sure that I can find a job if I complete my program.

Like this student, a few other students emphasized that their poor academic records in middle school could only get them this far and they did not really have a choice. They felt pleased to be able to continue to study in any high school. Their educational expectations were lower than those who choose to go to a regular high school, but they realized what they expected of themselves, i.e., attending a vocational high school.

Another student who applied to vocational school directly described her reasons for entering a vocational high schools:

I had wanted to come to the tourism school a long time ago. A girl in the same apartment went there and now works at Haitian (a premier hotel in the city). I like that kinda working environment. You can get to know a lot of interesting people there. That's why I decided to come to the tourism school ... I don't live nearby. It takes me about 30 minutes by bus to go to school, but I like what I will do. I think I made the right choice.

Admission to regular high schools and vocational high schools proceeds at the same time. When a student finds out whether or not he or she was accepted by a regular high school, most of the popular vocational high schools are often already filled up. These students are admitted only to a vocational high school of a lower rank. Four students applied to a regular high school but failed to enter. This group appeared to have experienced the greatest stress and dissatisfaction during the transition from middle school to vocational school. At the time of application two years ago, their academic performance was right on the borderline and they were not sure how well they would do on the exams. On the one hand, the students knew they may not be accepted by a regular high school. On the other hand, they were aspiring for a college education and they must apply to regular high schools. But they failed to get in. One of the four students recalled his reactions upon knowing that he was not accepted:

I was really upset. Everyone in my family was upset. I thought I did well on the exam. Later I learned I was one-point below. I couldn't do anything about it. You know, that's the way it works. It wouldn't change it no matter how angry I was. That's not the end of the world, anyway. I can go to an evening school or a correspondence school after high school to earn a three-year college degree ... I like what I am learning in this (vocational) school. I guess it's because the skills I learn really makes me feel that I am able to do something (working) after I finish high school.

The Meaning of Vocational Education

High schools in China serve two functions, i.e., preparing students for college education or for future work. Attending a vocational high school simply means work but no college after high school. Vocational high school students are not expected to pass the college entrance exams for two reasons. First, the academic curricula in vocational high schools are far less demanding than what is required on the college entrance examinations. Second, a substantial part of the knowledge reflected on the college entrance examinations is not covered in vocational academic curricula. For example, physics and chemistry, two subjects on the college entrance exams for science and engineering departments, are not offered in many vocational school. All these arrangements in vocational schools work against the likelihood that they would be able to pass the college entrance exams. Giving up the opportunity for college education was a very difficult time only for some students. One student who apparently held higher expectation of himself that did many others told me:

I really wanted to go to college, and my parents hoped so, too. It was kinda embarrassing to me that all other kids in the neighborhood went to regular high schools. If I had a chance, I'd want to go to college. I did not want to disappoint anyone. But, I did not pass the cut-off point. I felt so bad about it for quite a long time. It's been two years since then, but I still think I would go to college if I had a chance.

One student who aspired to attend college after high school recalled that he did very well on his middle-school graduation exam and had high

hopes that he would do well on the high school entrance exam. He actually earned a score one point above the cut-off point for regular high schools, but only later learned that the school raised its admission point because, as he speculated, the school admitted students who had personal connections, such as children of its own teachers. He was unhappy about it. Like him, students who tried but failed to enter a regular high school apparently held higher expectation of themselves than going to a vocational high school. What struck me was not these students' initial unhappiness about going to vocational high schools, but rather their satisfaction with their vocational programs at present day.

Link to Jobs

Instead of preparing for college, students in vocational high schools spend more than half of their time studying vocational courses and participating in a practicum. In vocational courses, the students study *zhuanye zhishi*, the content knowledge related to a specific occupation and *caozuo jineng*, the operational skills required by most jobs. About two-thirds of the vocational students said they liked the vocational classes more than the academic ones. One said that a vocational education was a "more practical choice because it means jobs." Graduates of vocational students often find jobs with good pay compared to their counterparts from regular high schools who failed to enter a college. This is obviously the most critical reason why vocational students' attitudes about their education are changing.

Recent research on school-to-work transition in the US has focused on the preparation of skills for available jobs (Finegold, 1993). Few schools in the US are directly involved in the hiring process. Despite the recent effort of increasing school's roles in preparing students for jobs (e.g., Pauly, (1995), the

link between schools and jobs is less visible than that in Chinese vocational schools. The teachers I interviewed suggested that vocational schools do more than the training of skills for jobs in China. Schools never promise students guaranteed jobs, but students all know that their education directly lead to jobs. To facilitate the students' adjustment to vocational school and school-to-work transition, schools not only need to address the content of vocational education and the skills for jobs, but also need to build relationships with employers and negotiate on jobs for their students. In fact, many students get a job through long-term training contracts between schools and companies.

Students often rationalized their choice of school by stressing the employment opportunities after receiving a diploma from vocational school. Many believed that they would be better off looking for jobs with a vocational training than holding only a high school diploma. One student stressed the utility of vocational skills in real life situations when asked about reasons for her choice of school:

We also study math and physics, but they are of little use in our daily lives. People need to learn a useful skill to make a living. We are learning useful skills, we are also gaining social experiences beyond school. These are all the things that regular high schools don't get at.

One student who majored in computer and information management explained about his earning potential after high school:

I can probably make some 500-600 yuan a month when I graduate. This is not a whole lot, but it's good for a starting salary for young people. If I can get to do some software work, I can double that figure. But that

requires more training, perhaps a college degree. Since there is a lot of jobs out there, they may let me do softwares. It makes a lot more money than maintenance.

The 500-600 range was a typical salary for a high school teacher who has been in the profession for five years. Senior engineers and associate professors make around 1,000 yuan a month. The enticing financial rewards provided a powerful incentive to lure many adolescents to vocational schools.

Stress in Vocational Schools

My impression from the students' reactions was that vocational high schools were a lot less stressful than regular high schools. There is less home work, less academic anxiety, and more time and opportunity to explore the social world outside school. For example, many vocational students usually got just one hour of homework per day compared to 3-4 hours for a regular high school student. Many vocational school students disliked the fact they had to survive the extremely stressful, intensive preparations for the entrance examinations in the regular high schools. Not only do students find college preparation an intimidating, undesirable experience, but many parents, teachers, and educational authorities are also concerned with the high level of stress among the students in high schools. The only teacher from a academic high school I interviewed used a "three points, one line" analogy to describe the stressful lifestyle of his students in a regular high school. The three points referred to the school desk, the dining table, and the study desk at home. Numerous news reports are published every year about students' stress, psychological maladjustment, and even suicidal attempts as a result of preparing for and taking college entrance exams.

Expanded Social Worlds

Another advantage of attending a vocational school over a regular academic school as frequently mentioned by students was the opportunity for keeping in touch with other social worlds outside of school and the chance for dealing with people in non-school contexts so that they can improve interpersonal skills. These expanded forms of social experience appear to make many vocational students feel somewhat privileged. Some vocational students contrasted their social lives with their peers in academic schools and expressed sympathy for the latter who barely have any time for music, movies, or television. Adolescents become independent of their families at an earlier time. One student held this view:

They know how to study. That's all they know. They have to work so hard because they know the competition for college was real tough. But they were missing a good deal of other things one can do with their life. They were more and more tied up as the exams come close. But I am getting freer and freer, and I am spending a lot more time hanging out with friends outside of school than staying inside this year than last year.

The practicum and internships are valued by the students as an effective means of exploring the social worlds and learning adult manners and skills. But many schools do not encourage part-time jobs. It is still rare even for Chinese vocational students to become financially independent until they leave high school. Most of their after-school activities are unrelated to work.

Teaching in Vocational High School

Teachers told me that one demoralizing situation in the past about teaching in vocational schools was that vocational education was considered by educational authorities and society to be secondary to the mainstream academic education. This was particularly hard on the teachers of vocational schools because their roles and contributions were greatly marginalized and neglected. One teacher explained that it was difficult for mathematics teachers in vocational schools to receive any recognition because their students' performance was always poor compared to students in regular academic schools. Since the number of vocational high schools was small and they did not have their own alliance, they were often placed in the same category as any other regular high schools when it came to evaluate the teachers' and students' performance, which was usually assessed in the areas of academic studies, such as mathematics.

Among the changes implemented to elevate the social status of vocational achievement, the achievement of teaching in vocational schools was now evaluated against vocational teachers only, and vocational students' grades were also only compared across vocational schools. These changes have apparently generated a much greater incentive for academic teachers in vocational schools. The teachers I interviewed liked the change and believed that the current system was fair and encouraging.

In responding to my questions about changes in classrooms, all the vocational teachers generally expressed fairly positive views about their students' attitudes toward learning, motivation for good grades, and studying behaviors. Teaching in a vocational school was boring because students simply did not learn. One teacher told me what often happen in her

mathematics class back in late 80s when the school for the first time accepted vocational students:

The class was in chaos, and students were talking loudly and jumping around. Nobody was listening. I had to ask the students, Give me 20 minutes and let me finish my duties of instruction, then you get all the rest time. How's that?

After some ten years of reform and development, vocational classes are now in manageable order. Comparing my visits to the teachers' recall of classes in the past, there have apparently been significant changes in the classrooms. It was difficult to distinguish a mathematics class in a vocational high school from one in an academic high school except for the contents of the curricula. The students' classroom behaviors, teacher-student interactions, and the general physical settings in a vocational class appear as functional as in a regular high school class.

Differences across Schools

During my interviews with the students from tourism school and trade school, the two of higher ranks than the other, students were verbal and expressive in telling me about what they learn in school and what they plan to do after high school. When asked what he would do after high school, one of the tourism students explained his career plans in a lot of details to me:

I knew I wanted to work in a hotel. I wanted to come to this school because I knew it specifically trains students for hotel jobs. People all start with service positions. That's fine with me. I will do whatever I was

assigned. But my goal is to get to work in the front hall or at the front desk. I will work hard to impress people. I hope they can perhaps promote me to a manager position in two or three years. My ultimate goal is to become the manager for the front hall. (He turns to other two students) Don't be laughing at me. That's all I hope. It will take some time, I know.

Those from the transportation school and the food school were less enthusiastic about their education and were less eager in anticipating what they will do after high school.

I observed differences not only in students' attitudes about their education in general, but more specifically in their attitudes about academic studies as part of their vocational programs. Students from low-rank vocational high schools appear to be less serious about their performance in academic courses than those from high-rank schools. One student from the food school described his attitudes about academic courses in both middle school and high school:

I didn't really think the courses in middle schools were of any use for me to find a job. I blew most tests. I wasn't seriously worried. Same with the academic courses now in high school. But the difference is that I need to get good grades in mathematics and Chinese because they will look at my total points (or GPAs) in the end. I would be very depressed if I blew my accounting exam. I need to get a very good grade on that course so that I can build it into my credentials. It was perhaps the most important thing for me.

Although almost every student said that their vocational courses were more useful and more interesting than their academic courses, students in the trade and tourism schools apparently are more devoted to their academic courses. Students in these two schools get on the average 30 minutes more home work in mathematics and Chinese than those in the transportation school and food school. Five of the six students from the two low-ranking vocational high schools explained they easily got bored in academic classes because "the academic content was only remotely relevant to their vocations. " They study mathematics or Chinese only to meet the requirements for graduation. It is more true that they treated their learning of the more practical knowledge and skills in the vocational courses and practicum differently from their learning of academic knowledge.

Teachers in the tourism school favored a balanced emphasis on vocational and academic learning. They cared for their students' performance in academic studies as much as students cared for their performance in vocational courses.

Views About Status and Future of Vocational Students

Because of their lower academic competence, vocational students may be viewed as a group of less able young people who do not have a bright future. In China, educational achievement has been highly valued and considered to be the most important means for becoming government employees and gaining social respect. Because vocational schools often gave priorities to the learning of vocational knowledge and skills over academic studies, their students' academic achievement is likely to continue to decline in comparison with those in regular high schools.

A teacher described a rather negative view about vocational students:

We all know that these vocational students can't make it. They don't have the ability to go to college. It is already a success for them to learn some useful skills and to make a living on their own. Among them are many problem adolescents who are causing troubles in school and communities. The media are trying so hard to beautify their image, but we all know where the line is drawn. No parents would be willing put their child in a vocational school if they had a choice. Some vocational schools and workers' schools are the dumping ground of young "social garbage."

This view is largely a personal one because few of other people I interviewed, including teachers and school officials, went so far in criticizing vocational schools. A more typical view was that vocational students were hardly model adolescents and not all of them were good students, but vocational schools gave them a chance to learn some useful skills and have a more productive life.

Many vocational students themselves displayed a strong sense of pride in themselves as well as in their future opportunities. Few considered their training--commercial or manual--to be in the lower categories of occupations. Many expressed strong beliefs in the virtue of vocational training, especially in the opportunity for learning some techniques that could help them find a job. One vocational student explained his confidence in himself as compared to those in regular high schools:

I never felt I was a head shorter than them. They perhaps know more math, but I know things they don't. I am getting more experience with

society and work. Plus, I will start making money and become independent a lot earlier.

Vocational school students never felt socially less competent than their peers. On the contrary, they appeared to have a lot more time for socializing with friends than those attending regular high schools. A vocational school student described his experience with his middle school friends who went to regular high schools:

I don't get to hang out with them that much any more. I don't think we disliked each other, though. It's just that I have made new friends in high school, and we can always find time to do things together, like soccer or watching TV. They (those who went to regular high school) are always busy, and never have as much time as I do for friends.

There are few high school dropouts in China. Schools, even in less successful vocational high schools, provide students with a strong social identity so that it is relatively easy for students to develop a sense of belongingness. Once Chinese adolescents enter high school, graduation is taken for granted by students and parents. On the one hand, the society of China does not expect every 15 year old to be admitted to high schools. On the other hand, the Chinese society does not offer alternative solutions to those who entered high school but dropped out, particularly in cities.

Public support. The government and government-sponsored media have been aggressively promoting the image and utility of vocational education in the public. For example, eight to ten items dealing with vocational education appeared on the main pages in a major local newspaper, *Qingdao Daily*,

consecutively for 10 days. The title of one item read, "Vocational Education Leaping Forward." The increasing public support has inevitably led to changes in students' confidence in themselves, their attitudes about their future, and their ideas of socially desirable positions, all of which would be expected to result in an elevated self-image and sense of self-worth.

All the teachers expressed the desire to see more students enrolled in vocational schools. One of them offered her argument for a larger enrollment in vocational schools:

It was absolutely a waste to send so many young people to college. I see was a much greater need of graduates from vocational schools in the economy. I feel sorry for those non-vocational high school students who intended to go to college, but failed the exams. They probably had to attend a specialized secondary school and spend another two years to get a vocational certificate in order to find a job, which was only equivalent to a vocational high school diploma. That means they have wasted at least two years.

All the teachers mentioned the increasing attention and support to vocational education from the central and local governments. The central government has recognized the importance of vocational education and listed the expansion of vocational education as one of the key objectives in its five-year national development agenda. The rationale for the government's support is that the rapid growth of economy and jobs has been and will continue to be in the service industries of China and that vocational high schools train young students to become the ideal employees for these urban industries. Preferential policies are established by central and local

governments to favor the growth of vocational schools in particular to fuel the growth of vocational high schools in cities. For instance, some preferential policies allow vocational high schools to operate tax-free businesses for training and educational purposes, such as hotels, publishing houses, and electronic shops.

Continuing Education

It has become possible for vocational high school graduates to receive higher education in recent years (China Education Committee, 1996). There are two places to go for a post-secondary degree. A large majority of students go to the thousands of post-secondary evening schools, college-sponsored correspondence schools, and national TV universities, which are mostly part-time college programs for adult students. A small number of vocational universities are also created to accept vocational students. But only 2 to 3% of vocational school graduates each year are accepted by these universities. The prestige of the degrees from these part-time or vocational universities is usually lower than that from a formal 4-year college or university.

Summary

The interviews achieved the goal of obtaining students' views about their education, social status, and future opportunities. Students in vocational schools were less academically successful prior to entering high school, and vocational education is generally considered to have a lower status than academic education. Second, while at school, most students did not exhibit despair about their present or their future. Rather, students appreciated their vocational training as useful for their future work or other parts of their lives, and learning a useful skill appears to be instrumental in

students' development of a sense of efficacy and self-confidence. Third, variability exists in students' attitudes and motivation according to the rank of vocational schools. The rank is often determined by the employability of the occupations for which the school offers training. Students attending high-rank vocational schools appeared well-adjusted and motivated in school compared to those attending low-rank schools. Finally, the direct link of school to job is readily perceived and valued by vocational school students and the perceptions of utility of their education appeared to play a critical role in students' engagement in their education.

CHAPTER III

THE QUESTIONS TO ANSWER

A contradiction I observed in talking with the students and teachers was the self-confidence of vocational school students. This was surprising in high school system that is so highly stratified. Research has suggested that high school status was a major source of stress for adolescents (Delores, 1993). In their review article on the effects of secondary school tracking in the United States, Gamoran and Mare (1989) concluded that attending schools of lower status was associated with low self-esteem and a lack of motivation to learn. Few research findings appear to be in line with my observation of the psychology of Chinese vocational students, who appeared to like their school and expected to do well in school because of the usefulness of the school knowledge for their future jobs. These impressions needed to be explored further in depth through the analyses of the potential influences of family, school, and societal attitudes about vocational education on the students' engagement in school.

To further explore the implications from the interviews, I attempted to answer some specific questions based on the relationship between environmental influences and Chinese students' adjustment to vocational schooling.

The first question, would school and family environments as sources of influence on motivation be able to explain vocational students' motivation to learn and their goals for education when academic ability is controlled for? The key components of the family environment are believed to be the values and beliefs related to vocational education held by parents. The key

components of school environment include the focus of learning, the roles of teachers, and the links to employment. As the interviews suggested, vocational school students were less enthusiastic about their academic achievement than their learning of vocational skills. It is likely that students' perceptions of the values represented in the social environments will play the most critical role in engaging the students in vocational education as well as in maintaining the students' confidence about the future.

The second question, between the two components of family influence, i.e., the values parents hold about vocational education and the education parents possess, which one is more critical in influencing the students' engagement in vocational school? Students learn a great deal from their parents. Many Chinese families tend to believe that children of low-status, less-educated parents can also learn to value the importance of schooling as long as parents held the same values. The core values parents hold about education seem somewhat independent of the socio-economic characteristics of families, such as parental education and income. Does this common observation continue to hold true among families where children attended schools of low status?

The third question, how important to the motivation of students is it to attend vocational schools that offer training in newly emerging occupations? Are these students more satisfied with their education? Are they more motivated to learn in vocational schools?

The last question, how much does a high engagement in vocational school determine a student's optimism about their future? Or, are the psychological attributes of the students largely determined by ability?

The qualitative nature of the interviews of a small number of students helped in streamlining the important issues concerning vocational school

students. More accurate and reliable conclusions about the specific relationships between the multifaceted social environments and student outcomes in vocational education require a study of more students quantitatively. A comprehensive survey study is, therefore, needed in order to measure students' views, motivation to learn, and their psychological characteristics as well as their perceptions of the views of their parents, friends, and teachers about vocational education. The goal is to determine which aspects in their life play critical roles in motivating them to engage themselves in vocational education and making them feel confident about the future. The next chapter presents the methodology for the survey study.

CHAPTER IV

SURVEY METHODOLOGY

The main instrument of the study is a comprehensive survey questionnaire consisting of about 70 questions related to vocational high school students' experiences with their education in and outside of school. These questions and items were designed to assess vocational students' psychological attributes and the meaning to them of schools and evaluate the influence of educational engagement on their psychological attributes.

Sample and Participants

A total of 500 vocational high school students and teachers participated in this study. The students resided in Beijing, a city with approximately 85,000 vocational high school students in 1996 and some 140 schools for them. In consultation with authorities in vocational education at the Institute of Psychology of the Chinese Academy of Sciences and the National Center for Educational Research, I constructed a list of schools that offer secondary vocational education. Eight were randomly selected from the list. The sample included vocational schools from several school districts of the city. It included both newer and more traditional vocational schools. Two classes were then randomly selected from the eight schools and all students in the classes were invited to participate in the study.

These vocational classes covered a wide range of vocational specializations for which the students were preparing, including finance, computer, hotel management, electrician, fashion designer, kindergarten

teaching, technician, and business assistant. Some of the vocational specializations, such as computer and finance are considered to be newly emerging fields. Some others are considered to be traditional fields, such as teaching and technician.

Gender. The sex distribution of the sampled schools is presented in Table 4.1. Overall, 65% of the participants were female students, a slightly greater proportion of female students than the entire population of vocational school students in Beijing, which was 60% in 1995. The presence of large proportion of female students was largely due to the participation of Fashion Design and Teacher's School, which have a high concentration of female students (85% and 99%, respectively).

Male and female students earned similar scores on the high school entrance exam. The average score for male students was 490 (SD = 43). The average score for female students was 488 (SD = 45). The ranges were also very similar.

Parents' Education. The average level of educational attainment for mothers was lower than that for fathers, but the range was similar. Mothers averaged 10.5 years of schooling. Fathers averaged 11.3 years. The average levels of schooling of mothers and fathers were significantly correlated, $r(492) = .56, p < .01$. In Chinese families, relatively well educated women tended to marry better educated men, and vice versa.

Table 4.1 subdivides the sample by the vocational specialization and reveals a fairly wide range of income distribution. Families that have a monthly income of RMB 1,000 or less make up 15.8% of the students who were studying to become an electronic assistant compared to 42.4% of those who would become a factory technician. MANOVA results verified the significance of the difference in family income across the fields for which

TABLE 4.1
PERCENTAGE DISTRIBUTIONS OF STUDENTS BY VOCATIONAL SPECIALIZATION, GENDER,
INCOME, AND PARENTAL EDUCATION

	Gender		High School Entrance Score		Family Income	Father's Education	Mother's Education
	Total N	Female	Mean	(SD)	RMB 1,000 or Less	High School or Less	High School or Less
Computer	69	40.6%	504.1	(32.8)	23.5%	36.8%	50.7%
Fashion Design	72	84.7	445.4	(51.7)	40.0	58.3	59.7
Electrician	37	40.5	499.9	(19.3)	15.8	42.1	60.5
Finance	88	59.1	529.8	(17.1)	34.1	36.7	45.6
Hotel service	70	65.7	441.0	(46.4)	38.0	44.1	52.2
Secretary	27	81.5	494.0	(32.1)	23.0	22.2	40.7
Teacher	67	98.5	473.9	(28.7)	38.1	33.3	48.5
Technician	66	50.0	455.6	(38.1)	42.4	45.5	52.3
Total	496	65.1	488.9	(44.5)	33.7	41.2	51.4

Note. The total number of students is 500, in which four cases have missing value on Sex. The entrance scores are obtained from school records. Every school and major has a minimum entrance scores for admission. These scores are, in the order of the job types listed in Table 3, 500, 380, 480, 510, 450, 500, 400, and 420, respectively. Family Income and Parental Education are categorical measures. Family Income is monthly income based on student report.

students were preparing, $F(7, 474) = 2.7, p < .01$. No relationship existed between vocational fields and parents' education.

The correlations between family income and parents' education were small. The correlation between father's education and family income was $r(486) = .12, p < .05$, while for mothers the correlation was $r(485) = .14, p < .05$. Within the families where there were children attending vocational schools, better educated parents did not necessarily make more money than did less well educated parents. Because the sample confined the statistics to the narrow range of vocational school students, the correlation between education and income could be greater and much more significant if regular high school students were included. It helps to keep in mind that any conclusion based on the analysis in this research only applies to the variations within vocational education.

High school entrance score. The highest average entrance score was received by students of finance, 530, and computer, 504, two of the most popular and newly emerging careers for high school graduates in China. The difference of 87 points between the highest and lowest scores suggests a wide range of pre-high school ability among the vocational school students sampled in this study. MANOVA results showed a marked effect of fields on the entrance scores, $F(7, 348) = 46.9, p < .001$. Not surprisingly, there was a rather wide range of academic ability even within vocational education.

Despite that vocational schools typically accepted students with low academic ability and were designed to meet the needs of these low achieving adolescents, some newer, more popular fields often attracted able students away from regular high schools. Scores for entering a regular high school in the same year were around 500, therefore, many vocational students could have made it if they applied to regular high schools. The descriptive results

indicated that at the time they entered high school, some vocational students were academically much better prepared than some others.

New vs. traditional fields. The analysis examining the schools individually indicated consistent and strong differences in students' academic ability between the newer and more traditional fields. Another major difference lies in their employment opportunities for graduates from these vocational schools. In the interviews, the students studying in the newer fields appeared to be more confident about finding a good job than those who studied in more traditional fields. Despite that the employment rates remain high for vocational students in almost all fields (People's Daily, 1997), students who studied in the newer fields often found jobs months before they graduated, according to the records kept by the schools I visited. In my conversation with the principal of a vocational high school in Hunan Province, he told me that about 95% of students in his school found a job by the time they graduated (personal correspondence, 1996).

All the more traditional fields were grouped together and all the newer fields were group together. The group of newer fields included the other specializations that offer training in some of the newly emerging industries in the economy, such as computer, finance, and hotel management. Fashion design and hotel service, despite their low entrance scores, were also included in the group of new fields because they were vocational high schools and these fields were considered to be new in China's economy in the 80s. The group of more traditional fields included the teachers' school and the technical school. Kindergarten teaching and technician were considered to be traditional fields largely because vocational training in these fields began long before the recent decade, and graduates from these specializations did not find their skills to be especially demanded in the market.

TABLE 4.2
**DESCRIPTIVES OF STUDENT CHARACTERISTICS
 BY VOCATIONAL SPECIALIZATION**

	New Fields	Traditional Fields	Total
Sample size	363	133	496
Gender (% female)	61.7%	74.4%	65.1%
Parents' education			
Father mean (<i>years</i>)	11.3	11.2	11.3
Standard deviation	(2.4)	(2.9)	(2.6)
Mother mean (<i>years</i>)	10.6	10.3	10.5
Standard deviation	(2.6)	(3.1)	(2.7)
Family income			
Mean (<i>RMB</i>)	15,100*	14,205*	14,862
Standard deviation	(7,376)	(7,629)	(7,446)
High school entrance score			
Mean	499.0*	462.0*	488.9
Standard deviation	(43.3)	(36.0)	(44.5)

Note. The newly emerging fields included computer, finance, hotel, electronics, fashion design, business secretary. The traditional fields included kindergarten teacher and technician. * $p < .01$.

MANOVAs were performed to compare the scores and demographic variables of the two groups of students. The results are shown in Table 4.2. As expected, on the average the newer fields demanded a higher score on the entrance exams than did the more traditional fields. There were few significant differences in the demographic characteristics between the two groups of adolescents except those in the newer fields tended to come from somewhat wealthier families.

Survey Instrument and Measures

To answer the questions raised in Chapter III, I developed an extensive questionnaire, in part, on the basis of the information from the interviews. The questionnaire has items about information on socioeconomic status of families, students' attitudes about their education, their beliefs and values related to vocational schooling, their motivation for achievement, self-competencies, and their views about future. The complete questionnaire can be found in Appendix B: Student Questionnaire. Some questions were taken and modified from the cross-cultural study of academic achievement and motivation conducted by Stevenson and his colleagues (1992) in Beijing, the study of achievement goals of Chinese students by Mu, Shi and Maehr (1997) in Beijing, the study of Japanese night schools conducted by Kinney (1994) in Tokyo, and the Pulkinnen and Ronka (1994) study of adolescents' sense of optimism (1992).

Students filled out the questionnaire in a class setting. The questionnaire was administered by the head teacher of the class to students. The teacher was also asked to complete an evaluation sheet (Appendix D) on their students.

Collection of high school entrance scores. Students' academic ability prior to high school was measured by their scores on the high school entrance exams. All junior high school or middle school graduates needed to pass the exams to enter high school, academic or vocational. The exams consisted of separately administered tests on math, Chinese, physics, political science, and English. Schools accepted students primarily based on the total score on the exams. The average scores for students in each school sampled in the study appear in Table 4.1.

Development of Educational Engagement Indices

The questionnaire utilized indices to assess students' psychological attributes and their engagement in vocational education. All indices were composed of logically interrelated items determined prior to the collection of any data. Another method of developing indices was employed after the data was collected. Efforts were made to increase the reliability in the measures and construct internally consistent indices by first computing correlation matrices composed of items in each index. Visual inspection of these matrices allowed the investigator to identify a number of items in several of the indices whose pattern of correlation with other items clearly suggested that they were not contributing positively to the reliability of the index. Consequently, these few items were not included in the final index. The final items are listed in Table 4.3 for each index.

There were three indices of psychological attributes: optimism, self-esteem, and perceived competence. There were two indices of students' attitudes about school: the perceived utility of learning and motivation for achievement. Four more indices were created to evaluate the four critical sources of social support students received in adjusting to vocational

TABLE 4.3
SCALES AND CORRESPONDING INTERVIEW ITEMS

Scales	Items in Student Questionnaire
Optimism	Q16: 36,37,46,51
Self-esteem and satisfaction with self	Q11:1 Q16: 38,39,52(reverse)
Self-competence and perceived potential for success in the future	Q16: 55,56,57,58
Engagement in vocational education	Q16: 35,40,41,42,43,49
Perceived utility of vocational education	Q16: 18,19,20,21,44,48
Perceived support from teachers in receiving vocational education	Q13: 3, Q14: 3, Q15:3, Q16: 40,41,42,43
Perceived support from parents in receiving vocational education	Q13: 1, Q14: 1, Q15:1, Q16: 31,32,33
Perceived support from peers in receiving vocational education	Q13: 2, Q14: 2, Q15:2, Q16: 27,28
Perceived support from society in receiving vocational education	Q16: 29,30,45

Note. Scales are aggregated averages of the corresponding items.

education: perceived support from teachers, perceived support from parents, perceived support from peers, and perceived support from society.

Appendix A presents the means and standard deviations of the individual items used in each scale. Each of the above scales is described more fully below.

As a means of empirically assessing the internal consistency of the indices, Cronbach's alpha was computed for each index. Table 4.4 presents alpha coefficients for each of the measures. Conventionally, scales with alpha coefficients lower than .5 can not be considered reliable measures. Clearly, all the scales meet this criterion.

Optimism. This scale evaluated students' attitudes about success and failure, present and future, and achievement and disappointment. A composite index for optimism was created as the mean of students' responses to the following four questions: 1) I believe I am able to make my career goal to come true, 2) My expectations of the future are generally optimistic, 3) I think I will be able to find a job I want by the time I graduate from high school, 4) I have strength to face the future. Optimism was considered to be an important psychological achievement during adolescence (Pulkinnen & Ronka, 1994).

Self-esteem concerned students' general satisfaction with themselves and personal happiness. It was composed of four questions asking students to evaluate how much they like themselves and how satisfied they feel about their achievement inside and outside school. A composite index for self-esteem was created by calculating the mean of the four individual questions.

Perceived competence concerned students' views about what they were able to achieve. The scale also measured students' potential for success at future work. Students were asked to evaluate their social and communication

skills, adaptability in meeting new requirements, and talent in learning by doing. These were considered to be the desirable outcomes of a successful vocational education.

Engagement in education. The concept of educational engagement in this study encompasses a comprehensive measure of motivation to learn and purpose of education. As demonstrated in some other studies, the development of expectations and motivation for work appears to begin with forming clear goals for education (Lubinski, Benbow, & Ryan, 1995; Munson, 1992; Stantili & Furth, 1987; Savickas, 1984). It was, therefore, appropriate to consider both having clear goals for education and motivation to learn in measuring engagement in vocational education.

These measures allowed the investigator to examine whether the vocational school students were motivated in school after they entered high school and whether they knew clearly what they were studying for. Six items were used to create the index for motivation to learn in vocational school. Students reported on how much they liked school and how motivated they felt in working hard. Another dimension of motivation is having goals for education. The goals could be finding a good job, earning good grades, and so on. Regardless of which particular goals they have for themselves, holding on to something they desire to achieve by means of education was considered to be an essential component of students' engagement in their education. See Appendix A for the individual items used in this scale. As will be shown, the Engagement index does emerge as a useful predictor of optimism when combined with perceived social support in a comprehensive model of educational engagement and psychological achievement.

Perceived utility of learning. Six questions were designed to measure students' perceived utility of learning in vocational school. The questions

concerned the students' views about the importance of their education, the focus of the teaching in their school, and the employment utility of their skills. As will be shown, the Perceived Utility of Learning index emerges as a useful predictor of educational engagement.

Support from the social environments. Students were asked to evaluate statements concerning the values and beliefs held about their teachers, parents, peers, and society. The statements dealt with how vocational education was viewed by others and whether these views were perceived by students as supportive and positive. Perceptions of supportive views about vocational education in their social environments could not only help the students recognize the value and utility in their education, but also help them develop self-confidence and more positive views about their future.

For example, the six items about parental support and influence, as reported by adolescents, measured parents' views about vocational education, their support in students' choosing to go to vocational school, and their helpfulness in students' thinking about careers.

Five questions asked students to evaluate the views of their friends about their education and whether they share common interests in career options. For example, students were asked whether most of their friends go to vocational schools, too.

Three questions tapped the attitudes of the society at large as perceived by adolescents. For example, students were asked whether what they hear about vocational education from people is largely negative or positive.

The internal reliabilities of the scales measured by Cronbach alphas ranged from .65 to .79. These scales were considered to be statistically satisfactory.

TABLE 4.4
MEANS, STANDARD DEVIATIONS, AND RELIABILITY OF INDICES

Indices	Mean (SD)	Number of Items	Cronbach Alpha
Optimism	5.2 (1.0)	4	.66
Self-esteem	4.3 (1.1)	4	.65
Competence	5.5 (1.0)	4	.79
Engagement in Education	5.2 (1.0)	6	.76
Utility of Education	5.3 (1.0)	6	.78
Support from Teachers	5.3 (1.1)	5	.75
Support from Parents	5.4 (1.0)	6	.74
Support from Peers	4.6 (1.2)	5	.68
Support from Society	4.9 (1.2)	3	.73

Note. All items used seven-point scales.

The results from these measures are presented in the following chapter. The objective of the analysis is to increase our understanding of the relationships among perceived social supports, students' perceptions of utility in education, motivation to learn, and adolescents' optimistic views about their future.

CHAPTER V

RESULTS AND DISCUSSION

The preceding chapter presented descriptive information about the sample and the measures employed in the study. The 500 students from eight vocational high schools are believed to closely resemble the diversity present in China's vocational schools. Analysis were conducted mainly to examine the degree to which school, family, peers, and society were part of a supportive framework for Chinese adolescents in their adjustment to the preparation for work. The investigator attempted understand the intricate relationships among social support, students' engagement in education, and their psychological attributes, such as optimism. Based on these students and their teachers, the results from this study will enable the investigator to learn a great deal about the views of today's Chinese adolescents who are eagerly preparing for their future in a rapidly changing society.

Results will be presented in five major sections: (1) A description of the indices of educational engagement and psychological attributes by school and vocational specialization is found in the first section. An analysis of school differences in student characteristics is included. Students studying in the various vocational fields are compared on their responses to the measures. The students studying in the newer fields as a group are also compared to those studying in more traditional fields as a group. The results will evaluate the effects of school and vocational fields on students' engagement in education. (2) The second section is devoted to the examination of optimism and its predictors. The analysis consists of factors more than school difference. Optimism, an indicator of psychological achievement for adolescents, is evaluated as a function of educational engagement measures.

Two other critical indicators of adolescents' psychological achievement, self-esteem and self-competence are also examined in the second section. (3) Relations between utility of education and educational engagement are analyzed in the third section. The analysis seeks to evaluate the importance of perceptions of educational utilities in motivating vocational students to learn. (4) Relations between perceived social support and students' perceptions of utility in their education are examined in the fourth section. To discern patterns of relations between indices, regression coefficients are compared among the indices for perceived support from parents, teachers, peers and society. The fourth section includes a detailed examination of students' responses to questions comparing the roles of parents, teachers, and friends in thinking about career plans. The results provide further evidence for the differing importance of the various sources of social support in adolescents' lives. (5) The final section analyzes the mediating effects of perceived utility in education in a path model by linking perceived social support to optimism through educational engagement. Structural equation processes are employed to calculate the estimates for each path. The indirect influence of perceived social support on optimism is considered in analysis of the relations between perceived social support and perceived educational utilities and between students' engagement in school and their optimistic views about the future.

Differences Across Vocational Specialization

It is postulated that within vocational education students' views and motivation are a function of vocational specialization for which they are preparing. One way school can significantly influence students' views about

their education is by presenting the link between the training and employment opportunities. Because the training in some vocational fields could offer better employment opportunities than some others, students' views about the utility of their education may vary from school to school. It is assuring to discover that the type of vocational specialization for which students are preparing influences students' perceptions of the utility in their education. It is also worthwhile to examine the effects of school on more variables, such as optimism, self-competence, self-esteem, engagement, and perceived support from teachers, parents, peers, and society.

Table 5.1 presents the MANOVA results on school differences by vocational specializations.

Perceived Utility in Education

The greatest difference across the vocational specializations was found in students' perceived utility of education. Of all the eight specializations, students who were studying fashion design and hotel service gave the highest rating to the utility in their education, while those who were studying to become electricians, kindergarten teachers, and business secretaries reported the least utility in their education. Scheffé testing ($p < .05$) verified that a difference of 0.5 or greater between any pair was statistically significant. One is immediately struck by the fact that the ratings given by students in the teachers' school to the utility of their education were very low ($M = 4.9$ as compared to 5.9 for the students of design). Would it be mainly a difference between newer and more traditional fields? The highest means were earned by schools in the newer fields. But not all the schools in the more traditional fields earned the lowest ratings. The school for technicians received a mean

TABLE 5.1
MEANS AND STANDARD DEVIATIONS OF OPTIMISM,
ENGAGEMENT, AND PERCEIVED UTILITY OF EDUCATION

	Optimism	Self-esteem	Perceived Competence	Educational Engagement	Utility of Education
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Computer	5.2 (1.0)	4.3 (1.1)	5.6 (0.8)	5.1 (0.9)	5.4 (0.9)
Design	5.4 (1.0)	4.2 (1.2)	5.2 (1.2)	5.5 (0.9)	5.9 (0.8)
Electrician	5.2 (1.1)	4.1 (1.3)	5.4 (1.1)	5.1 (1.0)	4.9 (1.3)
Finance	5.1 (1.1)	4.3 (0.9)	5.4 (1.0)	4.8 (1.1)	5.2 (1.0)
Hotel service	5.5 (1.2)	4.5 (1.1)	5.8 (1.0)	5.5 (1.0)	5.6 (0.9)
Secretary	4.8 (1.0)	3.9 (1.1)	5.8 (1.0)	5.1 (1.1)	5.0 (1.1)
Teacher	5.1(1.0)	4.4 (1.1)	5.6 (0.9)	5.0 (1.1)	4.9 (1.2)
Technician	5.4 (0.9)	4.3 (1.0)	5.5 (1.1)	5.3 (0.9)	5.4 (0.9)
MANOVA <i>F</i>	2.0	1.3	2.3*	4.1****	8.3****

Note. For all MANOVAs, *dfs* = 495-499. All measures are 7-point scales.

* $p < .05$

** $p < .01$

*** $p < .001$

rating higher than did three schools in the newer fields, i.e., electrician, secretary, and finance.

Clearly, the differences in students' views about the utility of their education are greater than what can be explained by the differences between the new and traditional fields. Other possible explanations could be found in students' personal experience with vocational education, such as the support they received from parents. Factors other than school difference that can influence students' perceptions of utility in education are discussed in later sections.

Educational Goals and Motivation

There were significant main effects of vocational field on students' engagement in education, but the size of the effects was small. Educational engagement was defined as having goals for education, appreciating the importance of education, and having motivation to learn in vocational school in this study. Students who were studying fashion design and hotel service again had the highest means on educational engagement, the index of motivation to learn. These students did not have especially high scores on the high school entrance exams, but they were now among the most motivated in vocational education.

One is surprised to note that those who were studying finance had the smallest mean on motivation despite their impressive academic records prior to high school. The results provide empirical evidence for the observations from the interviews that academic ability was not predicative of vocational students' motivation and performance.

Optimism, Perceived Competence, and Self-esteem

There were no main effects of school on how the students viewed about their future and felt about themselves. Although there was a significant effect of school on perceived competence, the size of the effect was small.

Students of hotel service once again had the highest mean along with those who were studying to become business secretaries. The lowest mean on self-competence was received by the students who were studying fashion design despite that they rated their motivation and utility of education the highest. Despite that a few means differed from each other significantly, there appears to be little school effect on psychological attributes.

Support from Teachers

It is worthwhile to examine how students perceived their teachers' attitudes about vocational education. Teachers' views and attitudes are likely to account for some of the school differences. Students' perceptions of support from their teachers were compared across their vocational specializations. Students' perceptions of support from parents, peers, and society were also examined for comparison purpose. These measures of perceived support consist of values dealing with the utility and status of vocational education held by each of the social agents as perceived by students. For example, the perceived support from parents was students' perceptions of parents' attitudes about vocational education and parents' assistance in thinking about career plans.

MANOVAs were conducted to test the group differences. The results are presented in Table 5.3.

The results revealed a significant school effect on perceived support from teachers. In rating support from teachers, the students of fashion design had the highest mean. This finding may provide some explanation for the

TABLE 5.2

**MEANS AND STANDARD DEVIATIONS OF PERCEIVED SUPPORT
FROM TEACHERS, PARENTS, PEERS AND SOCIETY**

Vocational Field	Perceived Support from Teachers	Perceived Support from Parents	Perceived Support from Peers	Perceived Support from Society
	M (SD)	M (SD)	M (SD)	M (SD)
Computer	5.3 (1.0)	5.3 (1.0)	4.6 (1.1)	4.8 (1.3)
Design	5.9 (0.8)	5.5 (1.0)	4.4 (1.2)	5.0 (1.2)
Electrician	5.3 (1.1)	5.3 (1.0)	4.6 (1.1)	5.2 (1.3)
Finance	4.1 (1.5)	5.4 (0.9)	3.8 (1.6)	4.8 (1.2)
Hotel service	5.5 (0.9)	5.2 (1.1)	4.6 (1.1)	5.1 (1.2)
Secretary	5.3 (1.0)	5.1 (1.2)	4.6 (1.5)	4.8 (1.2)
Teacher	5.0 (1.2)	5.6 (0.9)	4.9 (1.2)	4.8 (1.3)
Technician	5.5 (0.9)	5.4 (1.0)	4.6 (1.2)	4.7 (1.2)
MANOVA <i>F</i>	11.3****	1.4	2.5*	1.2

Note. For all MANOVAs, *dfs* = 489-498. All measures are 7-point scales.

* $p < .05$

** $p < .01$

*** $p < .001$

paradox that these students performed poorly prior to entering the vocational school, but gave the highest rating to the utility of their vocational education and were the most motivated to learn.

Among all the potential sources of influence, teachers were perceived to be the strongest in students' experience with vocational education.

Inspection of the means across vocational specializations provides more information about the influence of teachers on students. The students of finance, who were the most able prior to entering vocational education, did not see much utility in their education and were not motivated to learn. These also had the lowest mean on the rating of support they received from teachers. The low ratings on teachers suggests a possibility that the students' experience in vocational school failed their expectations. As some of the most able vocational students, they may not find the learning in vocational school to be challenging for their ability.

New vs. Traditional Specializations

More reliable evidence for the effects of school on perceived utility of education can be obtained by grouping the fields into groups. As described in the previous chapter, the vocational specializations are distributed into two groups: one included all the vocational high schools, which tended to offer training in newer fields, such computer and hotel service. The other included the more traditional fields, such as kindergarten teachers and technicians. Students from the two groups were compared on their perceptions of the utility in their education, their motivation to learn, their optimistic views about the future, and perceived social support. The means and standard deviations of students' responses are shown in Table 5.3. MANOVAs were

conducted to test the differences between the means of the ratings given by the students.

The most revealing finding was a significant main effect of school on students' perceived utility of vocational education. The results suggest that students who were studying in the newer fields recognized greater utilities in their education than did those in the more traditional fields. This finding was consistent with that from the analysis performed on the schools individually, confirming a school effect on students' perceptions of the utility in education.

The scale of perceived utility of education was composed of six questions. These questions concerned whether students perceived their school to be emphasizing the link between vocational skills and employment, whether students considered the skills they were mastering in school to be critical in finding a job, and whether students considered their learning to be more useful now than before. It is useful to discover which attributes in the scale produced the greatest source of variations between schools by examining students' responses to each of the six items individually.

Measures of perceived utility of education. The means of the six measures of perceived utility of education are presented in Table 5.4. The item that had the greatest school differences in students' responses was the importance of school for the future. Students of the new fields were more likely to consider their school to be important for their future than were those of the more traditional fields.

TABLE 5.3
MEANS AND STANDARD DEVIATIONS OF SCHOOL EFFECTS

Measures of Engagement	New Fields	Traditional Fields	MANOVA
	M (SD)	(M (SD))	<i>F</i>
Optimism	5.2 (1.0)	5.3 (1.0)	0.2
Self-esteem and satisfaction with self	4.2 (1.1)	4.4 (1.1)	1.1
Self-competence and perceived potential for success in the future	5.5 (1.0)	5.5 (1.0)	0.2
Engagement in vocational education	5.2 (1.0)	5.1 (1.0)	0.5
Perceived utility of vocational education	5.4 (1.0)	5.1 (1.1)	6.6***
Perceived support from teachers	5.4 (1.1)	5.3 (1.1)	1.0
Perceived support from parents	5.3 (1.0)	5.5 (0.9)	3.6
Perceived support from peers	4.5 (1.2)	4.7 (1.1)	3.1
Perceived support from society	5.0 (1.2)	4.8 (1.2)	3.0

Notes.

1. For all MANOVAs, *dfs* = 486-498.

2. Newly emerging fields included computer, finance, hotel, electronics, fashion design, business secretary.

3. Traditional fields included kindergarten teaching and technician.

* $p < .05$; ** $p < .01$; *** $p < .001$

When students responded to whether their learning in high school had more use than in middle school, students in the newer fields were more likely to agree than those in the more traditional fields. The relationship between the type of occupation for which students were preparing and their perceptions of education could be attributed to the relevance of their skills to employment opportunities. Some of the skills are in greater demand. Some schools have better connections with employers. Some fields offer better salaries. All these factors can affect how students perceive the utility in their education. Overall, the newer skills, such as computer, appear to be more useful and are perceived by students to be of greater utility than the more traditional skills.

The two groups of students did not differ in their opinions about whether they were learning skills useful for finding a job, whether their skills were critical for their future job, and whether their school emphasized the learning of practical knowledge. Therefore, the school differences on the scale of perceived utility of education were largely weighted on the measures of the importance of school for future and having clear goals for career.

Controlling for academic ability. The above analyses indicated that students studying for different occupations had somewhat different views about their schools. Vocational school students preparing for newer occupations were more positive about their school than were the ones preparing for more traditional jobs. Nevertheless, another factor, the

TABLE 5.4
**MEANS AND STANDARD DEVIATIONS OF PERCEIVED
 UTILITY OF EDUCATION BY VOCATIONAL SPECIALIZATION**

Measures of Perceived Utility of Education	New Fields <i>M</i> (<i>SD</i>)	Traditional Fields <i>M</i> (<i>SD</i>)	Anova <i>F</i>	Ancova <i>F</i>
Learning skills useful for finding a job	5.4 (1.6)	5.4 (1.4)	0.0	0.4
Most students have career plans	4.5 (1.6)	4.1 (1.6)	6.6*	10.8***
Skills I am learning are critical for my future job	5.9 (1.4)	5.6 (1.5)	5.0*	3.0
School emphasizes the learning of vocational knowledge	5.5 (1.4)	5.6 (1.5)	0.2	0.3
I found more use in what I learn now than in middle school	5.9 (1.5)	5.6 (1.5)	4.1*	5.6*
School is important for my future	5.3 (1.5)	4.7 (1.5)	17.4***	10.2***

Notes.

1. For all ANOVAs, *dfs* = 494-498.
2. For all ANCOVAs, *dfs* = 365-369, *academic ability* was the covariate.
3. Newly emerging fields included computer, finance, hotel, electronics, fashion design, business secretary.
4. Traditional fields included kindergarten teacher and technician.

* $p < .05$; ** $p < .01$; *** $p < .001$

students' academic ability, needed to be examined before any solid conclusion could be drawn on the effects of vocational specialization on students' views about their education. At the time of entering high school, academic achievement was a major criterion for the admission to the more competitive classes of popular vocational specializations. Therefore, prior to the separation into vocational specializations, students were differentiated by academic ability. Differences in ability could be interacting with the effects of vocational specialization because popular schools usually had more able students.

Students' scores on their high school entrance exam were used as a measure of their academic ability. The exam assessed students' basic knowledge of mathematics, sciences, and literature. It was administered by the local educational committee and was taken by students enrolled in the last year of junior high school throughout the entire city. Evidence for the difference in academic ability became clear when the two groups of students, the newly emerging vs. the more traditional, were compared on their high school entrance scores. Students of the newly emerging specializations earned an average of 499 points on the high school entrance exam compared to an average of 462 points by students of traditional types.

Given the wide variations in academic ability across vocational specializations, it became necessary to examine the potential interaction effects between students' ability and the effects of vocational specialization. Analysis of covariance was conducted on students' perceptions of their schools by specialization with academic ability as the covariate. The inclusion of academic ability as a covariate in the ANOVAs provided a more accurate assessment of the effects of specializing in different fields of occupation. All but one ANOVA results on the effects of vocational specialization shown in

Table 5.4 remained statistically significant after the effects of ability were controlled. The F s from the analysis of covariance were shown next the ANOVA F s. The significance of the main effects from vocational specialization remained largely unchanged when the influence of ability was partialled out, indicating that academic ability was not sufficient in explaining the effects of vocational specialization on students' views about their education.

Satisfaction with Vocational School

The above findings tended to confirm the observation that the schools offering training in newly emerging fields placed the emphasis on the teaching of practical skill and had teachers caring more about their students' future. But, were students attending these schools more satisfied with their education?

A comparison of the students' responses to the satisfaction measures yielded no significant differences. The students did not differ in their satisfaction with their choice of high school. Nor did the two groups of students differ in their liking for their current school. The few differences between the two types of vocational specializations on satisfaction attributes highlighted a similarity among vocational students. Regardless of the level and status of vocational schools they were attending, the students were generally satisfied with their education.

Overall, the students rated their liking for their current school higher than their satisfaction with the choice of education (4.9 compared to 4.4). A repeated measure ANOVA confirmed that the students' responses to the two measures were statistically significant, $F(2, 479) = 4.9, p < .05$. The results

only suggested that the students expressed a more positive attitude about the school they were currently attending than their choice of education.

There were other similarities in vocational students regardless of their specializations. The two groups of students did not differ in their responses to how satisfied they were with their achievement in either academic or vocational classes.

Summary

The findings provided some answer to the first question concerning the influence of school on students' views about their education. Students studying for different occupations viewed the utility of their education differently. Students of the newer fields were more positive about their schools and their future than were those of the more traditional fields. But school differences were not able to explain much about the students' optimistic views about their future, which is considered to be a critical indicator of psychological achievement in research on adolescents (Pulkinnen & Ronka, 1994)

Adolescents' Optimism and Self-esteem

The analyses at school level did not substantially add to our knowledge of how adolescents viewed about their future and felt about themselves. There was no relationship between vocational field and students' optimism and self-esteem. The next issue this research attempted to explore dealt with adolescents' psychological well-being. The question is which factors were associated with these critical indicators of psychological achievement for adolescents?

Because the transition from school to work continues after high school, students need to remain optimistic about their future in order to make the transition into the future successfully. An optimistic attitude about the future is an important attribute for adolescents to be considered as successful (Pulkinnen & Ronka (1994). As an integral part of the agenda in this research, optimism as well as self-esteem and competence were measured and analyzed in relation to educational success.

These psychological achievements were investigated as a function of educational success such as having goals and motivation to learn in vocational school. A wider range of social and personal factors, including ability, and social support for receiving a vocational education as perceived by the students, were also considered in the analysis.

Optimism

One goal of the research is to find out who are the successful vocational students and which factors are responsible for their success. There many ways to measure the success of adolescents. In school, academic achievement is perhaps the most common measure of success. For vocational student, academic achievement may not be a fair measure of success because they are studying not to earn good grades, but to learn skills for a job. Adolescents' views about their future can provide a more general measure of success. Pulkinnen & Ronka (1994) studied thousands of adolescents in diverse cultures and found that successful adolescents tended to hold optimistic attitudes about their future. While it is important for everyone to be optimistic about the future, it is especially useful for the low-ability adolescents to develop optimism and confidence in a society where the view of

adolescents' success was largely based on academic merits. Therefore, it is of great significance to examine whether perceptions of the utility in vocational education and the engagement in vocational education promotes optimism.

I employed multiple regression analysis to evaluate the influence of the various factors on adolescents' optimism, including educational engagement. Optimism was the dependent variable and measured by the questions dealing with students' views and attitudes about their future (see Appendix A).

Predictive factors. The independent variables employed in the analyses included gender, ability (as measured by high school entrance scores), personal attributes (self-esteem and perceived competence), parental education (as measured by the average of both father's and mother's education), school effect, perceived utility of education and engagement in vocational education, perceived support from parents, teachers, peers, and society. The results are presented in Table 5.5.

The analysis produced striking results. The largest effects were from educational engagement. This result provided empirical support for the relationship between educational engagement and adolescents' optimism. As noted in Chapter 4, educational engagement was defined as having goals for education, appreciating the importance of education, and having motivation to learn in vocational school in this study. The strong association between educational engagement and optimism suggested that the more motivated and more purposeful the students felt about their education, the more optimistic they felt about their future.

TABLE 5.5
**MULTIPLE REGRESSION ANALYSIS OF ADOLESCENT OPTIMISM
 AMONG CHINESE VOCATIONAL STUDENTS**

Independent Variables	Correlation with Optimism	Standardized Regression Coefficient
Gender (<i>1=Female 2=Male</i>)	--	-.08
Academic ability	-.17**	-.03
Parental education	.06	-.02
School (<i>1=New 2=Traditional</i>)	--	.03
Self-esteem	.43***	.12**
Perceived competence	.51***	.29***
Engagement in education	.58***	.40***
Perceived utility in education	.39***	.07
Social support		
Perceived support from teachers	.25***	.03
Perceived support from parents	.32***	.01
Perceived support from peers	.20***	.04
Perceived support from society	.23***	.00
<i>Multiple regression summary</i>	<i>R = .70</i>	<i>R² = .49</i>

Note. $N = 423$. The adjusted R^2 is .47.

The association between optimism and educational engagement was obtained when the other factors were held constant in the regression analysis. Some factor can be the common cause of both educational engagement and optimistic attitudes. But it can not be any of the factors specified in the analysis. Neither academic ability nor parental education produced any significant effect on optimism. In addition to the learning of the vocational skills and knowledge, the development of an optimistic attitude about the future appeared to be another valuable utility of maintaining a high level of engagement in vocational education for Chinese adolescents. It seems appropriate to underscore that education was not only viewed as an integral part of the lives by vocational students, but also viewed as a significant correlate of optimism.

Self-esteem and perceived competence were the next most important factors in predicting optimism. It was not surprising that these psychological attributes were highly predictive of optimism, which itself was a psychological attribute. All these attributes tended to describe the successful vocational students whose experience with vocational education was psychologically gainful.

The regression also included the measures of perceived social support, but none of them exerted any significant effect on optimism. Their correlations with optimism were high, ranging from .20 to .32. That the perceived social support did not predict optimism in the regression analysis could be due to the inclusion of the more powerful correlates such as educational engagement and perceived utility of education, which may have expelled the effect of social support from the prediction. Despite the perceived social support measures did not predict adolescents' optimism, the regression analysis achieved an overall multivariate R of .70, a remarkably high level of

prediction. The prediction was largely achieved by the strong effect of educational engagement on optimism.

Self-esteem

A main critique of vocational education in the US is, besides its association with low-status, students of vocational classes seemed to suffer from negative views about future and low self-esteem compared to their counterparts in regular and college-prep classes (Dornbush, 1994; Delores, 1993; Rojewski & Sheng, 1993; Munson, 1992; Rossetti, 1989). The supporters of vocational education originally thought with an increased emphasis on useful knowledge vocational classes ought to make high school learning more suitable and attractive to less able students. Despite the achievement of vocational education - vocational education appeared to reduce drop-out rates (Hamilton, 1986) and apprenticeships enhanced opportunities for employment (Finegold, 1993), students enrolled in vocational classes often viewed their future negatively. A doubt prevailed in the literature that vocational education could deliver its promises about preparing students for a better future.

The interviews I conducted in Chinese vocational schools suggested that vocational education seemed to be able to deliver its promises and students felt satisfied with what they learned from school in a carefully crafted learning environment. It was, therefore, an interesting effort to examine the factors that would explain self-esteem of vocational students.

The analyses conducted on optimism revealed a strong association between educational engagement and psychological success. The analyses on self-esteem and perceived competence continued to provide evidence for the

relationship between educational engagement and vocational school students' psychological attributes.

Predictive factors. To find out which factors were responsible for self-esteem, multiple regression analysis was performed with all the factors employed in the previous analysis on optimism. A closely related attribute, perceived competence, was also examined here. The results are presented in Table 5.6.

Educational engagement exerted the greatest effect on both self-esteem and perceived competence, in line with the findings on optimism. Successful vocational students, being optimistic about the future, being positive about themselves, and being confident about their competencies, tended to view themselves as highly engaged in their education, purposeful and motivated.

Support from Society. Studies of the effects of negative views of society about vocational education found a relationship between the negative views and low self-concepts (Pittman, Robert, & Chalker, 1994; Stern & Eichorn, 1989). This research found a similar relationship between social values attached to schools and students' views about themselves. The perceived support from society was measured by students' responses to questions about education-related social values and the opinions of people around them other than their parents, teachers, or friends. The significance of the effect of perceived support from society was found in its indication of the image of vocational education represented in society. The results revealed an association between adolescents' feeling about themselves and the image of their school as viewed by society. This finding distinguished self-esteem and perceived competence from optimism, on which the perceived support from society did not have any significant effect.

TABLE 5.6

**MULTIPLE REGRESSION ANALYSIS OF ADOLESCENT SELF-ESTEEM
AMONG CHINESE VOCATIONAL STUDENTS**

Independent Variables	Perceived Competence	Self-esteem
Gender (1=Female 2=Male)	-.01	-.03
Academic ability	-.07	-.07
Parental education	.05	.03
School (1=New 2=Traditional)	.01	.00
Engagement in education	.40***	.33***
Perceived utility in education	-.15**	.06
Social support		
Perceived support from teachers	-.07	.06
Perceived support from parents	.09	.08
Perceived support from peers	.14**	.05
Perceived support from society	.14**	.14**
<i>Multiple regression summary</i>	<i>R = .38</i>	<i>R = .45</i>

Note. Shown in the table are standardized regression coefficients. $N = 453$.
The adjusted R^2 are .13 and .19 for the prediction of self-esteem and
perceived-competence respectively.

Although research with vocational students suggested the association between the concentration on vocational courses and low self-esteem (Munson, 1992; Oakes, 1992), few explored the reasons behind the association. The findings from this research suggested that it was not family status, academic ability, or school status that determined self-esteem. The factors associated with self-esteem appeared to be educational goals and motivation and the values about vocational education in society as perceived by adolescents.

Perceived competence. Self-esteem is often used to refer to a person's sense of overall self-satisfaction, which delineates somewhat different areas of the self from perceived competence. In this study, perceived competence is defined as self-assessment of one's potential for achievement in the future. Perceived competence distinguished itself from self-esteem by a significant peer effect that predicted competence, but did not predict self-esteem. Having friends going to vocational school tended to let students develop confidence in their competence. In line with the general effects of associating with peers of similar interests on self-concepts and identity (e.g., Helbing, 1984), this finding tended to extend the general effects of peers over to low-achieving adolescents.

Summary

These analyses confirmed a strong association between education engagement and psychological success as measured by optimism, self-esteem and perceived competence. Not to overstate the findings, a couple points need to be pointed out. First, the analysis, as all similar analyses, was only intended to show correlations, not causal relations. Second, the results showing that parents and teachers did not exert any impact on these psychological attributes did not rule out the possibility that they could have a

significant effect on educational engagement. And if there is any parent or teacher effect on education engagement, parents and teachers could influence adolescents' psychological achievements through the mediating effects of educational engagement. Knowledge of students' satisfaction with their education is apparently not sufficient in predicting self-competence and self-esteem fully. Numerous factors not specified in this analysis could affect adolescents' feelings about themselves as well.

Engagement in Vocational Education

The research achieved its goal of confirming the critical roles of educational engagement in predicting psychological achievement of vocational students. The next goal is to discover which factors motivated vocational students to develop educational goals and motivation, and engage themselves in studying vocational knowledge. The potential factors to be examined include perceived support from teachers, parents, peers and society, academic ability, perceived utility of education, parental education, and school effect. Multiple regression was employed to evaluate the influence of each of these factors on educational engagement. The results are presented in Table 5.7.

Perceived utility of education. As one can see, the results showed a very strong effect of perceived utility of education on educational engagement. In fact, the relationship between utility of learning and the motivation to learn made up a great deal of the overall regression effects. One utility of vocational education was employment opportunity. The scale of perceived utility of education was developed from students' responses to questions about the utility of their skills for finding a job and questions about the

TABLE 5.7

**MULTIPLE REGRESSION ANALYSIS OF EDUCATIONAL ENGAGEMENT
AMONG CHINESE VOCATIONAL STUDENTS**

Independent Variables	Correlation with Engagement	Standardized Regression Coefficient
Gender	--	.02
Academic ability (<i>1=Female 2=Male</i>)	-.23**	-.15**
Parental education	.05	-.02
School (<i>1=New 2=Traditional</i>)	--	-.03
Perceived utility in education	.57***	.48***
Social support		
Perceived support from teachers	.36***	.01
Perceived support from parents	.26***	.10*
Perceived support from peers	.14**	.07
Perceived support from society	.23***	.00
<i>Multiple regression summary</i>	<i>R = .60</i>	<i>R² = .36</i>

Note. $N = 450$. The adjusted R^2 is .35. Engagement in education is defined as having education goals and motivation to learn in vocational school and measured by the Engagement index (see Appendix A).

importance of attending vocational school (see Appendix A for descriptive information about all six items that composed the scale).

Frome and Eccles (1998) found among American students that students who perceived a greater utility of the knowledge they were learning tended to do better in the course. The perceived utility of learning appeared to have a positive influence on students' performance in the course. Many Chinese teachers and students also indicated that the students in the more traditional vocational schools were less motivated for school. Despite the results did not support any school effects on students' engagement in school, empirical evidence was obtained for the relationship between perceived utility of education and students' motivation to learn at individual level.

Perceived support from parents. The size of parental influence was negligible. But the perceived support from parents, the measure of parental values dealing with the utility and status of vocational education as perceived by students, constituted the next greatest positive impact on educational engagement. This result did not come out to be any surprise. It was considered to be natural that children learn about the value of the most important activities in their lives, such as education, from their parents (cf., Darling & Steinberg, 1993; Rossetti, 1989). What appeared to be intriguing about the influence of parents was that parental education did not have any effect. The values parents held concerning the utility and status of vocational education, not their education, defined parental influence concerning Chinese students' engagement in school.

Nevertheless, the finding that there were no significant effects of parental education on having goals for education was not consistent with the literature on the roles of family status in school achievement. Studies of the association between social class and students' motivation for vocational

education, unlike what was suggested in this study, concluded with a strong link between the two (e.g., Furlong, 1993; Rossetti, 1989; Stern & Eichorn, 1989). A likely explanation for the lack of socio-structural influence on Chinese students' motivation in vocational schools is that many Chinese families hold cultural values that place a strong emphasis on the roles of valuing hard work and effort in achievement. It has been considered to be a value that even in the poorest families, parents who can not read themselves encourage their children to work hard to achieve their goals. However, it is also likely that the study only included vocational education, and consequently, limited variations were left in parental education. The limitations of the study are discussed in Chapter VI.

School effect. There was no significant school effect. Attending different schools did not make any difference in students' engagement in school. A lot of the differences associated with schools could be explained by students' perceived utility of education, which was rated differently by students attending different schools in early analysis.

Academic ability. Failing to produce any positive effect on the measure of optimism, academic ability rather had a negative effect on educational engagement. Vocational students who received higher scores on the entrance exam prior to entering vocational education tended to have a lower level of motivation to study in vocational school. This result did appear to corroborate with the findings from some previous research in the literature. Many studies of students at all levels suggested a positive relationship between motivation and academic achievement (c.f., Li & Gao, 1993; Slavin, 1990; Rosenbaum & Jariya, 1989; Guice, 1986; Crook, Healy, & O'Shea, 1984).

Given the great disparities in the academic ability of vocational students, one may suspect that this relationship would hold true for Chinese vocational school students, that is, Chinese vocational students of greater ability would display a higher motivation to learn or engagement in education. But, this was not the case for Chinese vocational students, as shown in the results here. A possible explanation was that in an environment that was made possible for students with low ability to excel, students with more academic talent may not find the learning and future promises to be challenging enough for them to study hard. Second, the student variation was reduced because of not including students of greater ability, attending academic schools.

Regardless, the findings appeared to corroborate the observation I made in the interviews that Chinese vocational students created a learning environment that tended to accommodate the needs of low-achieving students and prepare them for a better future.

Effects of Social Support

From the above analysis, academic ability was found to be insufficient in explaining the vocational students' views and feelings about their education. Rather, the perceived utility of education accounted for much of educational goals and motivation in vocational education. The results did not surprise anyone. Students who perceived utility in their education were the ones who were motivated to learn in school. The unexpected result appears to be that none of the social agents showed any strong influence on students' goals and motivation. A possibility existed that the social agents assisted students in perceiving their education to be useful. The inquiries continued.

How important were the support students received from their parents and teachers in recognizing the utility of vocational education, and consequently motivate them to learn in vocational school? This was the third question the research sought to answer.

In the following analysis, the effects of perceived social support are evaluated as potential factors behind students' perceptions of utility in their education. The analysis attempted not only to verify that students learned a great deal about the utility of their education from the social environments, but also to discover which elements in the environments constituted the greatest influence on students' views about their education.

Multiple regression was employed to assess the effects of perceived social support on perceived utility of education. Other factors considered in the analysis included gender, ability, parental education, and school effects. Among the attributes measuring perceived social support, many dealt with education-related values and attitudes held by teachers, parents, peers, and society as perceived by students. The standardized regression coefficients and multiple *R* Squared are presented in Table 5.8.

Teachers. The most significant finding indicated a remarkably strong effect of social support on students' perceptions of educational utility. The largest influence came from teachers. The scale of perceived support from teachers was composed of items measuring teachers' helpfulness in thinking about career plans, the interaction between teachers and students in school, and teachers' views about the value of vocational education as perceived by students. The size of effect from teachers (.41) exceeded that of parental influence (.24), peers (-.10) and society (.17). Fisher transformation confirmed the significance of the differences between teachers and any of the other social factors, $z = 3.01-3.96, p < .01$.

TABLE 5.8

**MULTIPLE REGRESSION ANALYSIS OF ADOLESCENTS'
PERCEIVED UTILITY IN VOCATIONAL EDUCATION**

Independent Variables	Correlation with Perceived Utility	Standardized Regression Coefficient
Gender (<i>1=Female 2=Male</i>)	.01	.01
Academic ability	-.16**	-.14***
Parental education	.04	.05
School (<i>1=New 2=Traditional</i>)	.10*	-.10*
Social support		
Perceived support from teachers	.54***	.41***
Perceived support from parents	.46***	.24***
Perceived support from peers	.14**	-.10*
Perceived support from society	.33***	.17***
<i>Multiple regression summary</i>	<i>R = .62</i>	<i>R² = .39</i>

Note. $N = 450$. The adjusted R^2 is .37. Perceived utility in education is measured by the Perceived Utility Index (Appendix A).

Teachers' support and assistance were apparently the most important for vocational students to consider their education to be useful. For vocational students, the roles of teachers are clearly critical not only because of their educational efforts, but also because of their influence on students' views about their education.

Parents. Perceived support from parents exerted the second largest effect in predicting utility of education. Despite the common belief in a strong influence from parents on children in Chinese culture, the data tended to suggest that the roles of parents in shaping up students' views about their education were secondary to those of teachers.

Influence of the views of society. Perceived support in society yielded a significant effect on utility of education. The questions that made up the scale dealt with the attitudes of people about vocational education as perceived by students. It is The finding expanded social influences beyond families and schools and provided some evidence for the usefulness of a positive image of vocational education in society.

Academic ability. Academic ability had a significantly negative effect on perceived utility of education. The finding described the students who received higher scores on the entrance exam as perceiving less utility in their education. In the previous analysis on educational engagement and motivation, academic ability exerted a negative effect as well. There was no strong reason to believe that these more able students were already less motivated and engaged in middle school than their peers. Therefore, they must have experienced serious declines in their motivation in vocational school. Meantime, their less able peers caught up and moved ahead in making the best out of vocational education. A possible explanation was that in an environment made possible for students with low ability to excel,

students with more academic talents may find the learning and future promises to be not challenging enough for them to do their best.

The findings were consistent with the observation I made from the interviews that Chinese vocational schools created a learning environment that tends to accommodate the needs of low-achieving students and prepares them for a better future while more able students may not find the environment much helpful in motivating them.

School effect. The effect of vocational specialization (-.10) was small, but statistically significant. The finding indicated that students attending schools in the newer fields, with ability and other factors controlled for, tended to perceive greater utility in their education than those in the more traditional fields. The regression result was consistent with the results of MANOVAs performed at the level school that examined student differences across schools.

The above analyses, simultaneously considering the effects of ability and the perceived social environments, provided support for the rejection of the belief that ability was a factor in fostering motivation for vocational school students. Rather, social contexts, such as the values parents and teachers held dealing with the value and status of vocational education, provided students' with the values they needed to justify receiving vocational education.

The intriguing portion of the message from the results lies in its focus on the positive outcomes on low-achieving, low-ability students who perceive their environments to be supportive of what's important to them. Low ability is possibly associated with low status prior to the curriculum differentiation. But, as students learn more about what vocational schools have to offer, the

ties between low ability and low status could be separated and vocational education is better characterized by a dynamic interaction between what students learn in school and what they expect themselves to achieve in the future.

Overall, these findings provided empirical evidence for the effects of social support on vocational students. Teachers and parents were perceived to be important in evaluating the utility of education by students. I collected more data comparing the roles of teachers and parents and their influences on students' views about their education. The results are presented in the following section.

Comparing the Influences of Teachers and Parents

The regression analyses found teachers to be more important than parents in predicting students' perceived utility of education. A more direct approach to examining the importance of the roles of these social agents in vocational students' lives is to ask them to compare them regarding their helpfulness in thinking about future and importance in choosing a career. I asked students in this study to rate how important parents, teachers, and friends were in making decisions concerning their careers, how helpful in choosing a career, and how much they shared similar views about what to do in the future. Students gave markedly different responses when the three referents were considered (see Table 5.9).

TABLE 5.9
STUDENTS' VIEWS ABOUT INFLUENCES FROM PARENTS, TEACHERS, AND
PEERS ON THEIR CAREER CHOICE

	<u>Parents</u>		<u>Teachers</u>		<u>Friends</u>		<i>F</i>	<i>Wilks'</i> <i>Lambda</i>
	<i>Mean</i>	<i>Std</i>	<i>Mean</i>	<i>Std</i>	<i>Mean</i>	<i>Std</i>		
Helpfulness in choosing career	5.3	1.5	5.6	1.6	4.8	1.5	46.5**	.84**2
Having similar views about career	5.1	1.4	5.1	1.5	4.5	1.4	35.4**	.87**4
Important in making career decision	5.4	1.5	4.7	1.7	4.4	1.6	77.9**	.76**1

Notes. The stem of all three questions was, "Talking to the following people (parents, teachers, or friends), how (helpful are they in thinking about your career)?" For all repeated ANOVAs, *dfs* = 491-496. Scheffé tests of contrasts confirmed significant differences between the following pairs of means: on Helpfulness, T-P, P-F, and T-F; on Similar Views, P-F and T-F; on Making Career Decision, P-T, T-F, and P-F.

** *p* < .01.

Importance in making career decision. On a seven-point scale, parents received the highest mean rating on the importance in thinking about career, followed by teachers, which in turn were rated to be more important than friends. All differences were significant. The results indicated that, for Chinese adolescents, parents apparently constituted the most important source of influence when it came time for them to make a career choice.

Helpfulness in choosing careers. Despite that parents were thought to be important in choosing a career, they were not considered to be as helpful as teachers by the students in thinking about what to do in the future. Teachers received the highest rating on helpfulness in thinking about their careers in the future. A possible explanation was that teachers knew a great deal more about the potential job market for the kind of training the student was receiving, and thus, were able to offer more suitable advice on the appropriate jobs for the student. Few parents were well informed about the job market. Moreover, parents may not know enough about the specifications of the training their children received in school to be able to offer helpful advice.

Teachers' influence on students. I asked students whether their teachers cared for their needs regarding employment. The correlation between teachers caring for needs and students having clear goals was .39 ($df = 498$), $p < .01$. Teacher caring for needs was also significantly correlated with having a greater motivation to study in high school than in junior high, $r(df = 498) = .34$, $p < .01$.

The influences of teachers were not limited to developing goals for education and having a motivation to learn. The greatest influence was apparently their instructions of knowledge and skills. Chinese vocational school teachers have gone a long way to have their contributions to be recognized by parents and students. As a result of degrading in the status of

school, teachers in vocational schools encountered tremendous difficulties in the early 80s in earning appreciation of their contribution to education. This research provided further evidence for the roles of teachers in vocational students' lives. Students acknowledged the roles of teachers by considering them to be the most helpful among parents, friends, and teachers in thinking about what to do in the future.

How did the teachers know about their students well enough to provide the help with their choice of career? To be able to answer this question, I asked the teachers to evaluate their students on four aspects of ability that are believed to be critical in succeeding at future work. Every student who participated in this study was evaluated by their head teacher. These four abilities included ability in adapting to new environment, ability in learning by doing, social and communication ability, and potential for success at future work. If the correlations between the teachers' evaluations and students' self-evaluation were high, I would assume that teachers knew their students well. The correlations between students' self-evaluations on the four domains and teachers' evaluations, however, were modest (see Table 5.10).

It was possible that the scales were vague and teachers were not clear about on which information they ought to rely their evaluations. But, the scales used exactly the same words for the abilities on both the students' and teachers' questionnaire. The discrepancies between students' self-knowledge and teachers' knowledge of students' abilities in the three particular fields held true empirically. A possible explanation for the teacher-student discrepancies could be that the interaction between Chinese teachers and students was usually confined to classroom settings and what teachers usually knew about their students was their academic ability.

TABLE 5.10
***CORRELATIONS OF TEACHERS' RATINGS WITH
 STUDENTS' SELF-RATINGS AND TEST SCORES***

Teachers' Ratings of Students on	Students' Self-Rating	Scores on Academic Test	Scores on Vocational Test
Adapting to new environment	.18	.20	.23
Ability in learning by doing	.10	.33	.32
Social and communication skills	.14	.15	.15
Potential for success at future work	.07	.29	.24

Note. For all r s, $p < .05$. $N = 448$.

The students' self-report scores on the academic and vocational tests provided an opportunity for me to examine whether Chinese teachers based their ratings of competence primarily on students' academic ability rather than the more generic abilities in learning by doing, adapting to new environments, and socializing with others. Students were asked to estimate the scores they would receive on a 100-point test of academic knowledge and a 100-point test of vocational knowledge where the averages of their class were 70 points. I calculated the correlations between students' self-reported scores on the hypothetical tests with the teachers' ratings (Table 5.4). Two of these r s were significantly higher than the correlations with self-ratings of abilities: ability in learning by doing ($r = .33$ compared to $.10$, $z = 4.5$, $p < .01$) and

potential for success at future job ($r = .29$ compared to $.07$, $z = 4.1$, $p < .01$). These relatively small correlations suggested that only a small part of the teachers' ratings about their students' abilities was based on their knowledge of the students' academic performance.

SES and helpfulness of parents. When the influence of parents on students was examined according to parents' educational level, a moderate effect of parental education on parental influence was revealed. The strongest case was found in parents' helpfulness in choosing a career, where college-educated parents were perceived to be more helpful than those who had high school education or less (see Table 5.11). The finding held true for both fathers, $F(1, 492) = 6.0$, $p < .05$; and mothers, $F(1, 490) = 4.2$, $p < .05$. The mean rating given by students whose parents were college-educated was 5.6, the same as they gave to teachers.

Despite the great variation in family income as reported by students, none of the relations between income and students' views of parental importance and helpfulness were significant. Although the sheer size of the difference in ratings between upper-income and lower-income families (5.4 vs 5.0 and 5.6 vs 5.2 on two questions) was equal to the size of the effects of parental education (5.6 vs 5.2), the former effect had a much smaller base size for statistical testing due to the exclusion of middle-income families in the analysis. The exclusion of middle-income families was to create two groups of maximum contrast on income. Even so, income did not yield any significant effects on how students' perceived the roles of their parents in their thinking about future career.

TABLE 5.11
FAMILY CHARACTERISTICS AND PARENTAL INFLUENCE ON
CAREER-RELATED DECISION MAKING

	Parents Helpful in Choosing Career		Parents Have Similar Views		Parents Influence on Career Choice		Total	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std
Gender								
Male	5.3	1.5	5.1	1.4	5.4	1.5	5.3	1.2
Female	5.1	1.7	4.9	1.6	5.2	1.7	5.0	1.4
<i>F</i>	5.5	1.4	5.2	1.3	5.4	1.4	5.4	1.1
	7.8**		7.9**		2.8		8.6**	
Dad ed	5.3	1.5	5.1	1.4	5.4	1.5	5.3	1.2
High sch	5.2	1.5	5.1	1.4	5.3	1.5	5.2	1.2
College	5.6	1.4	5.2	1.4	5.5	1.5	5.4	1.2
<i>F</i>	6.0*		1.3		2.1		3.4	
Mom ed	5.3	1.5	5.1	1.4	5.4	1.5	5.3	1.2
High sch	5.3	1.5	5.2	1.4	5.3	1.5	5.2	1.2
College	5.6	1.4	5.4	1.6	5.7	1.5	5.6	1.2
<i>F</i>	4.2*		3.7		3.6		5.5*	
Income	5.3	1.5	5.1	1.4	5.4	1.5	5.3	1.2
Lower	5.2	1.6	5.0	1.4	5.2	1.6	5.1	1.3
Middle	5.3	1.4	5.1	1.4	5.3	1.5	5.2	1.2
Upper	5.3	1.4	5.4	1.4	5.6	1.5	5.5	1.2
<i>F</i>	1.3		2.2		2.0		2.5	
Total	5.3	1.5	5.1	1.4	5.4	1.5	5.3	1.2

Notes. ANOVAs examined the main effects for each demographic group on the three measures. Repeated measure ANOV, across the three measures comparing the means in the Total row produced an $F(2,496) = 10.24, p < .01$.

The effects of income of family on other attributes of the students were also examined, including self-esteem, self-competence, and motivation to learn, but none of the effects were significant. Explanations for why income was not a significant source of variation in school-related student attributes could be sought in a cultural perspective. It has been held by Chinese families for a long time that a child excels when he or she works hard regardless of whether the child is growing up in a poor family or a rich family. The pattern of interaction between parents and children may vary by social class on what it appears to the observers, but the core values remain the same. Another core value of child-rearing in Chinese families is that children respect parents' decisions. This may explain why Chinese students considered their parents to be most important in their career-related decision making.

Relations Between Social Support and Optimism

Reviewing the results from the preceding analyses, one of the strongest finding was that the social support, especially the values and attitudes teachers and parents hold about vocational education, explained a great deal of students' views about their education. Students' views about the values in their education accounted for a great deal of students' educational goals and motivation. And, educational goals and motivation explained a great deal of optimism, self-competence and self-esteem. A means for testing the above flow of effects from social support to psychological success was path analysis. Path analysis could consider multiple chains of effects simultaneously and provide results indicative of causal relationships.

Figure 1 presents the results of path analysis. The analysis aimed to evaluate the proportion of the influence from the students' perceived social

values transmitted via engagement in vocational education onto self-esteem, perceived competence, and optimism. The model was tested using structural equation processes. The strength of each path was estimated on the basis of its correlation with all other factors. The dominating paths included the links between perceived social support and utility of education, between utility of education and educational engagement, and between educational engagement and optimism.

Perceived social support combined the four measures of perceived support from teachers, parents, peers and society to create one overall measure of social support. Two measures of educational engagement were used to represent the two constructs that made up the scale for educational engagement, that is, purposefulness of education and motivation to learn. The individual items that made up the scales are listed in Appendix A. The reliabilities of these scales were all above .70.

LISREL procedures were employed to calculate the estimates of the effects specified in the model. The model considered all the constraining correlations between the independent and dependent variables simultaneously. The final estimates were obtained when the procedures produced the best fit between the raw data and the model. The Adjusted Goodness of Fit Index (AGFI) was .92, indicating that the model fit the data satisfactorily. All coefficients were statistically tested and only the ones of statistical significance were shown in the diagram.

The analysis confirmed that significant effects on psychological attributes, such as optimism, came from engagement in education. The direct effect on optimism from perceived utility of education was less essential. But it was critical for the understanding of educational engagement. Utility of

education produced a remarkably high regression coefficient on engagement, which was defined as having motivation to learn and goals for education.

Social support constituted the major influence on students' perceptions of the utility in their education. Combined together, teachers, parents, peers and society almost determined how strongly the students viewed their vocational education to be useful. In contrast, school difference only explained a small portion of perceived utility of education. Academic ability had a negative impact on students' perceptions of the utility in their education.

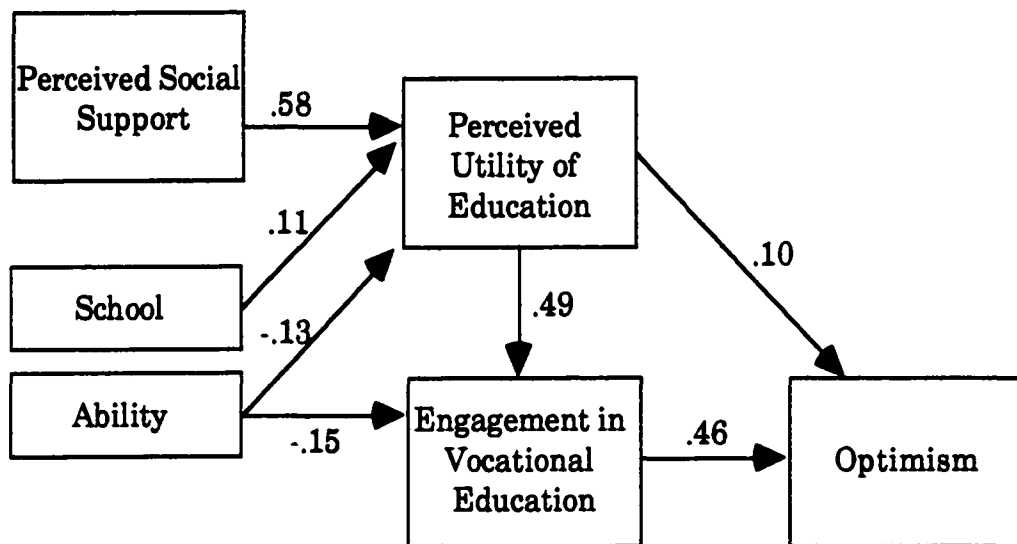


FIGURE 5.1

***LINKING EDUCATIONAL SUCCESS TO PSYCHOLOGICAL SUCCESS:
A STRUCTURAL MODEL FOR VOCATIONAL SCHOOL STUDENTS***

Engagement in education mediated the effects of social support on the success of vocational students. Social support promoted the perceptions of utility in education, which in turn encouraged students to engage themselves in vocational education, which in turn produced optimistic views about future. Despite that social support did not have any direct effect on optimism, its roles in the success of vocational students were evidenced in the analysis. Given the linear nature of the path coefficients, the indirect influence of social support on optimism can be calculated at $(.58 \times .10) + (.58 \times .49 \times .46) = .20$, a statistically significant effect ($p < .01$).

All these results were highly consistent with the results from the multiple regression analyses. The most critical learning about vocational students' success was the marked influences of educational engagement on optimism. Self-esteem and self-competence predicts optimism, however, the much stronger predictive effect of educational engagement on optimism tends to suggest that students could develop optimistic views about their when their level of engagement in school is high, regardless of their ability, self-esteem, and the type of vocational specialization for which they prepare.

The results on the social antecedents of vocational students' engagement in school and their psychological attributes suggested that a social learning theory would explain the success of some Chinese vocational students. Undoubtedly, the driving forces behind a successful adjustment were family, school, and society. The values and beliefs held by parents, teachers, and represented in society made up the essential components of the social contexts in which the vocational students learned about the utilities of their education, fostered values about their engagement, gained self-esteem and competence in themselves, and developed a motivation to excel. Vocational education could only strive to deliver what was promised when the

supportive social contexts prevailed in the students' immediate environments. Students subsequently accepted the values in their education, liked about their education, engaged themselves in the learning of much relevance to their future, which laid a solid ground for the low-status adolescents to build confidence in themselves and form optimistic attitudes about their future.

The analyses presented in this study produced a highly coherent and meaningful message, that is, engagement in school was the most crucial part of the story of a successful experience in vocational education. The mastery of vocational skills not only augmented the adolescents' chance for landing good jobs, but also prepared them for their future psychologically. The skills they learned in school would reward the adolescent with a job; the development of confidence in the future is a reward in a life time.

Summary

The results provided some answer to the question whether students who had clear goals for their education and motivated to learn in school hold more optimistic views about their future. The large proportion of the influence from social values on self-esteem was transmitted via engagement in school. In other words, engaging themselves in school was the most critical vehicle by which they could not only be prepared for their future professionally, but also be prepared psychologically as young adults for their roles in the society.

CHAPTER VI. CONCLUSION

This study had two primary purposes. The first was to provide a detailed description of the views of vocational students about their education, themselves, and their future. The second purpose of the study was to assess the degree to which social support influenced students' engagement in vocational education. Important findings concerning the relations between perceived social support and engagement in vocational education are discussed in this chapter.

Characteristics of Vocational Students

One of the most interesting, and to me, encouraging findings first emerged in the interviews with some 30 vocational school students and teachers. Vocational school students tended to be well adjusted in school, despite previously poor academic performance. Many students held positive views about their education and were optimistic about their future. As many students explained to me, they were studying hard because the skills they were learning could eventually help them find a job. Many students expressed a strong desire to obtain a good job when they finish vocational high school.

The survey results on differences across schools revealed an influence of vocational specialization on students' views about the utility of their education. Students attending some schools tended to perceive greater utilities in their education than those attending some other schools. The importance of perceiving utility in education to the students was underscored when one considers the fact that perceived utility in education was the most powerful predictor of educational goals and motivation to learn.

Students' academic ability was not found to be related to students' motivation to learn or their educational goals. This finding poses challenge to the common view that academically able students are more motivated to learn in school. In the case of vocational education, the context of learning changes from focusing on academic achievement to emphasizing the mastery of vocational skills. It is likely that ability does not necessarily increase or decrease students' desire to learn. Ability was found to be even negatively associated with a number of dependent variables, such as perceived utility in education. Since the majority students attending vocational schools are low ability students, the lack of association between ability and motivation revealed in this study tends to deliver the message that vocational school students can be motivated to learn as much as they are embraced with a proper, supportive learning environment.

The learning of the meaning of vocational education and the mastery of useful skills appear to be instrumental for students to gain self-confidence and a sense of optimism in what they can do and achieve in the future. The measures of educational goals and motivation to learn, as represented in the index of educational engagement in vocational school, predicted self-competence, self-esteem, and optimism. The results provide empirical evidence to reject the common belief that vocational education can not deliver what is needed for adolescents to develop psychologically. To a large extent, optimism and self-esteem are accounted for by the vocational students' educational goals and motivation for educational achievement.

Learning that vocational students who are successful in school are the ones who feel optimistic about their future did not completely answer all the questions the investigator raised in the beginning of the inquiry. Factors responsible for success in school were then explored.

Perceived Social Support

The study examined the effects of social support as perceived by students environment on students' engagement in vocational education. The values of social environments, especially the values held by parents, in adolescent development have been discussed in a wide range of research and reports covering from the development of self-efficacy to the development of human capital (cf., Becker & Tomes, 1986; Elder, 1996). The findings from this study reaffirmed the significance of parental values in adolescents' development of self-concepts. Students whose parents held more favorable views about vocational education tended to be more optimistic about their future (The correlation between perceived support from parents and optimism is .32). However, the influence of parental support on adolescents' optimism was mainly realized through its influence on students' engagement in education. Perceived parental support was found to have a significant impact on students' perceptions of the value in their education in regression analysis, but did not exert any effect on optimism when educational goals and motivation were considered at the same time.

A more striking result of the study concerning social influence on students' views about the values in their education was found on the part of teachers. Teachers can greatly change students' perceptions of vocational education and how useful it is. The regression analysis provided empirical evidence for a strong effect of perceived support from teachers on students' perceptions of the value in their education.

The analysis provided answers to the question of why some Chinese vocational students did well in vocational schools while others did not. The

answers are primarily found in the support students received from their school and family. The family influence consists of the values parents hold about vocational education, not how well parents are educated. The school influence consists of the values teachers hold about vocational education.

Very little of the variance in students' educational motivation and goals was accounted for by parental education. Parental education did not explain much of students' psychological attributes, either. One is left to conclude that parental education is not in any way related to motivation for achievement and educational goals among vocational students. However, there is one substantial difference between this study and most previous research on motivation and school achievement. Generally, studies are conducted with samples of adolescents drawn from the general population which includes some very poor achievers and some adolescents with very high levels of achievement. Students in this sample studied here were attending vocational school and were academically underachieving. This also means that the parents of all the students were alike in at least one way; their children were attending vocational school. Consequently, the sample may have represented a more homogeneous group than would be found with a truly random sample of high school students. Thus, the effects of academic ability and parental education may be underestimated. There is little reason, however, to suspect that the diversity in students' views was not large enough to allow valid analysis of the many relations in the study.

Ultimately, it must be concluded that the findings presented here are valid indications of the ways these 500 adolescents were engaged in their education, and the degree to which such engagement was related to their psychological achievement.

This study as the very first to address issues concerning the engagement in school and psychological adjustment of vocational students in China produced a baseline of the profiles of student characteristics and provided some explanations for the relations among family, school, student, and students' engagement in vocational education.

One implication of the study can be underscored. So much can be learned about the effects of education when vocational students are studied as a group of successful, achieving adolescents, rather than a group of adolescents who are underachieving and failing school. In many countries, including those whose education structure is vastly different from that of China, vocational students were rarely studied as successful adolescents. Studies of students concentrating on vocational courses revealed more about what adolescents could not achieve than what they could (Munson, 1992; Oakes, 1992). It appeared that we could only learn about how education failed rather than succeeded from studying adolescents attending vocational schools. Focusing on factors that are associated with success among Chinese vocational students, this research has taught us a great deal about how much educational engagement could accomplish in contributing to the development of successful adolescents, who were self-competent and optimistic.

The future of vocational education in China appears to impinge upon the capability of the new market economy for continuously creating new professions and entry-level new jobs. As the state-run enterprises begin merging and dissolving to meet the competition on the market, the technical schools they sponsored must be prepared for reform and diversification of its programs to become more flexible in meeting the needs from the rapidly evolving economy. For most vocational high schools, the key to success is constantly designing programs for their students to learn skills and

knowledge of employment promises. Given the structure of China's economy, the growth of vocational education, characterizing secondary education in cities for the past decade, will expand into rural areas and gain an even bigger momentum in influencing the lives of millions of Chinese adolescents in the countryside who aspire to study for a better living.

APPENDICES

APPENDIX A

MEANS AND STANDARD DEVIATIONS OF MEASURES IN INDICES

Optimism

	<u>M</u>	<u>SD</u>
36 I will achieve my career goals in the future	5.4	1.5
37 I will be able to find a good job when I graduate	4.3	1.6
46 My expectations of the future are generally optimistic	5.5	1.5
51 I have the courage to face the future	5.8	1.3

Self-Esteem

	<u>M</u>	<u>SD</u>
06 I am satisfied with my choice of education	4.5	1.4
38 I feel I have a number of good qualities	4.8	1.5
39 I am satisfied with myself in general	4.6	1.6
52r At times, I feel I am no good at all	3.7	2.0

Perceived Competence

	<u>M</u>	<u>SD</u>
55. I am doing well in adapting to new requirements	5.3	1.6
56. I am good at learning by doing	4.9	1.4
57. It feels easy for me to communicate with people	5.3	1.7
58. I have a high potential for doing a good job at work	5.8	1.2

Educational Engagement (Goals and Motivation)

	<u>M</u>	<u>SD</u>
35 I have a clear set of goals	4.9	1.5
40 My goal is to learn more vocational skills	6.0	1.3
41 My goal is to learn more academic knowledge	4.9	1.5

42 I have a higher motivation to study now than before	5.0	1.6
43 I like to go to school more than before	4.8	1.7
49 I can always complete homework on time	5.4	1.4

Perceived Utility in Vocational Education

	<u>M</u>	<u>SD</u>
18 School stresses learning has use for finding a job	5.4	1.6
19 Most students have career plans	4.4	1.6
20 Skills learned in school are critical in finding a job	5.8	1.5
21 School emphasizes the learning of vocational skills	5.5	1.4
44 I found more utility in what I learn now than before	5.9	1.4
48 School is important for my future	5.2	1.5

Perceived Support from Teachers

	<u>M</u>	<u>SD</u>
23 Teachers considered vocational education to be useful	5.8	1.5
24 Teachers asked students about career plans	5.5	1.5
10 Talking to teachers helps me thinking about careers	5.6	1.6
13 I tend to agree with teachers on my career plans	5.1	1.5
16 Teachers' opinions are important to me	4.7	1.4

Perceived Support from Parents

	<u>M</u>	<u>SD</u>
31 My family considers vocational education to be useful	5.4	1.5
32 My family never considers vocational education to be low-achieving	5.7	1.5
33 I received a lot of support from parents in choosing to attend vocational school	5.4	1.7
8 Talking to parents helps me thinking about careers	5.3	1.5
11 I tend to agree with parents on my career plans	5.1	1.4
14 Parents' opinions are important to me	5.4	1.6

Perceived Support from Peers

	<u>M</u>	<u>SD</u>
27 Most of my friends attend a vocational school	4.6	1.8
28 My friends accept that I am in vocational school	4.8	2.2
9 Talking to friends helps me thinking about career	4.8	1.5
12 I tend to agree with my friends on my career plans	4.5	1.4
15 Friends opinions are important to me	4.4	1.6

Perceived Support in Society

	<u>M</u>	<u>SD</u>
29 There is a positive attitude about vocational education in place where I live	5.3	1.5
30 I rarely hear people talking about vocational education negatively	5.1	1.7
45 I received a lot of support from people around me	5.1	1.5

APPENDIX B

STUDENT INTERVIEW

STUDENT INTERVIEW	
Date of Interview:	_____
Location of Interview:	<u>QingdaoCHINA</u>
Interviewer:	<u>Xiaotong Mu</u>
Gender of Interviewee:	☐ Male ☐ Female

"Hi, My name is MU Xiaotong. I grew up here, and also went to high school in this city. That was more than a decade ago, though. It seems there has been a lot of changes since. Now I am studying adolescent development at a university in the U.S. In the U.S., there are few high schools that only provide vocational education; instead, many regular high schools also have vocational courses. Many other countries also provide vocational education in high school, but in different ways. For example, in Japan, many students go to vocational school in the evening and graduates of vocational high school can go to a technological college if they are doing very well. People in China obviously have different ideas about the best way for preparing the young people for work. There is a lot more vocational schools now than when I was going to school here. I am very interested in knowing about current high school. For example, I want to hear you talking about your opinions on vocational education, and what people around you think about it. Let's first talk about your situation before high school. I need to tape-record this if you allow, I assure you your name will be kept anonymous.

I. The students' status in junior high school. Talk about their grades in junior high, attitudes about academic subjects, and get them to talk about what made them decide to go to vocational high school.

Sample questions: How did you do in math in junior high? How about other courses? How would you compare yourself with others in your class? Did you like the academic courses, such as math, Chinese, etc.? What is the quality of your junior high? I have heard people talking about the difficulties many students experience during the transition from junior high to high school. Did you feel there are a lot of differences after you entered high school? Was it easy for you to adjust to the differences?

II. Reasons for choosing vocational high school. Trying to elicit the reasons why students decide to go to vocational school and their general attitudes about vocational training and its relevance to future job.

Sample questions: How come did you choose to go to a vocational high school? Did you take any tests? Do they have different scores for different schools? I heard some schools have difference entrance scores for girls. Is this true with your school or any of the school you know? Do you remember how many in your class ended up going to a vocational school? Did you parents like you to go to vocational school? Did most of your friends go to vocational school? Did you have any idea about your future career? What were the goals for your career then? What are your goals for a career now? Why is it that you did not want to go to college?

III. Students' attitudes about school. Elicit information about what they study in school and how things are set up for occupationally specific vocational training. Get them to talk about their attitudes about vocational education.

Sample questions: How many academic courses are you taking? How many vocational courses are you taking? How many hours? What are they? How do you like the courses? Do you think they would help you a lot in finding a good job in the future? In what way is your school providing career guidance to students? Do you have practicum? How about internship? Do you think the skills you are learning are useful for your future job? What are the things you think your school expects of the students the most?

In the U.S., vocational education in high schools has a lot of problems. The achievement of vocational students is quite low and the quality of their education is quite worrisome to parents. What do people think about vocational education in China? What are the best things of your school? What

do you like the best about your education? What are the worst things? When you compare vocational and regular high schools, what are the advantages and disadvantages of each of them?

IV. Students' attitudes about employment. It is relative easier these days to find a job in the U.S. than a couple of years ago. The employment rate is the lowest in decades. I heard that are also plenty of jobs for young people in cities, particularly for those like you with certain training. If you are to work, in what ways would you find a job? Is this how most people find their jobs? And do you have any idea how long it would take for one to find a job after graduating from a vocational high school?

What kind of jobs do most vocational school graduates do? Do you think these jobs are primarily low-income, low-skill jobs? Do you think without more education vocational school graduates will have hard times in the future to find good jobs? How many of your classmates will be able to find a good-paying job after high school? (Suggestions: better or worse, more goods or fewer, more money or less, etc.) Do you think the reforms will have a great impact on your employment opportunities in the future?

What are the most important factors for one to have a successful career in China? Can you tell me more about what it means to be ... ?

Suggestions: hard work, luck, wealthy parents, high intelligence, college degree, personal connections, job related skills, getting along with other people.

What are the most important things you would consider in choosing a job? Can you tell me more about what it means to be ... ?

Suggestions: salary, opportunities for advancement, job security, prestige of the company, working schedule, job matches my interests, opportunities to help others, location.

Have you thought about what kind of work you will do in the future? What kind of job you would wish to do **now**? What kind of job you would wish to do **ten years from now**? Are you clear about the steps you need to take to achieve your occupational goals? What are they?

V. Students' life outside school. In the U.S., young people like your age spend a lot of time with friends or watching television after school. They usually don't have much home work. I remember when I was in high school here, I had barely any time for watching television, or playing around with friends after school. There was too much homework to do. How is it in China these days? Do you have a lot of homework to do after school? Outside of class hours, how many hours a week do you estimate you spend in the following activities:

Studying schoolwork _____ hours/week

Reading for pleasure _____ hours/week

Hanging out with friends _____ hours/week

Viewing television _____ hours/week

Reading newspaper/magazines _____ hours/week

Other major activity you frequently participate in:

_____ for about _____ hours/week

Influence of parents. Do your parents know about your plans? Do they generally agree with you? What would you do if they disagree? Who has the greatest influence on you when you make your career plans? Yourself? Parents? Friends? Media? Teachers? Would you say that your parents are offering too much or too little advice on you in your education and career development? Generally speaking, do you think young people of your age in China agree or disagree with their parents more often? What are the things you think they disagree on the most?

Why is this so?

VI. Awareness of wider social worlds.

Sample questions. The most important thing for me now is to finish my Ph.D. After that, I hope I can find a university to do research and teach. What are the most important things for you now? What do you think are the biggest problems facing the young people around? Who do you think should be responsible for these problems, the young people themselves, their parents, the school, the media, or the society at large? What are young people around you concerned about the most? Job? Money? Friends? Grades? Why is it so?

Are the problems in the society that concern you the most the same as those facing young people? If not, what are they? (*Suggestions: people are talking too much about money and too less about education.*)

What are the things that can make young people feel pride of themselves? Good grades? Physical appearance? Good family? Lots of friends? May I ask what make you feel proud of yourself?

People in China are talking about reforms and changes a lot. What type of the reforms do you that are having the greatest impact on you or your family? Are there any changes in people's ideas and behaviors do you particularly like to see happen? Are there any do you particular dislike to see happen? Chinese always stress education. But I heard many people are worried to see little utility of education in their lives. What are people's typical attitudes about education these days? What do you think about it? Do you think people care for less or more education now than before? Why is it so?

Are there anything else you think it is important for me to know? I enjoyed very much talking to you and thank you for your time. Do you have any questions for me?

APPENDIX C

STUDENT QUESTIONNAIRE

This is a comprehensive study of adolescents' school experiences. Your participation will help us greatly in learning about the lives and thoughts of today's young people. Your responses will be kept confidential from your school and parents. We appreciate your time very much!

1. Your gender ☐ Female ☐ Male

2. What are your parents' highest levels of education?

Father: (check one)

- ☐ elementary school
- ☐ middle school
- ☐ high school or secondary school
- ☐ three-year college
- ☐ four-year college
- ☐ graduate school

Mother: (check one)

- ☐ elementary school
- ☐ middle school
- ☐ high school or secondary school
- ☐ three-year college
- ☐ four-year college
- ☐ graduate school

3. How would you describe your family's total yearly income: (check one)

- ☐ Below RMB 5,000
- ☐ 5,000 - 10,000
- ☐ 10,000 - 20,000
- ☐ 20,000 - 30,000
- ☐ 30,000 - 40,000
- ☐ Above 40,000

4. How many hours a week do you spend in school now? _____

b. How many hours a week do you spend studying academic courses?

5. How many hours a week do you spend studying vocational courses?

b. How many hours a week do you spend participating in extracurricular activities in school?

6. How important to you are the following:

	Not at all important		Neither important nor unimportant			Very important	
a. Gain more knowledge	1	2	3	4	5	6	7
b. Get good grades	1	2	3	4	5	6	7
c. Go to college	1	2	3	4	5	6	7
d. Get a good job in the future	1	2	3	4	5	6	7
e. To satisfy my parents	1	2	3	4	5	6	7
f. Learn some vocational skills	1	2	3	4	5	6	7
g. Have many friends	1	2	3	4	5	6	7

Which one do you think is the most important? _____

	Dislike very much		Neither dislike nor like			Like very much	
7. How much do you like to go to school?	1	2	3	4	5	6	7
8. How much do you like academic classes?	1	2	3	4	5	6	7
9. How much do you like vocational classes?	1	2	3	4	5	6	7
10. How much do you like the practicum?	1	2	3	4	5	6	7

11. How satisfied are you with your:

	Very dissatisfied		Neither satisfied nor dissatisfied			Very satisfied	
a. Choice of high school?	1	2	3	4	5	6	7
b. Academic achievement?	1	2	3	4	5	6	7
c. Vocational achievement?	1	2	3	4	5	6	7

12. How would you rate yourself compared to others of your age in:

	Much below average		Average			Much above average	
a. Academic achievement	1	2	3	4	5	6	7
b. General information	1	2	3	4	5	6	7
c. Getting along with other people	1	2	3	4	5	6	7

d. Intellectual ability	1	2	3	4	5	6	7
e. Motivation to learn	1	2	3	4	5	6	7
f. Career prospects	1	2	3	4	5	6	7
g. Social skills	1	2	3	4	5	6	7
h. Vocational knowledge and skills	1	2	3	4	5	6	7
i. Working out everyday problems on your own	1	2	3	4	5	6	7

13. Do you feel that talking with the following people helps a lot in thinking about your careers:

	Not at all helpful		Somewhat helpful			Very much helpful	
a. Parents	1	2	3	4	5	6	7
b. Friends	1	2	3	4	5	6	7
c. Teachers	1	2	3	4	5	6	7

14. Do you tend to agree or disagree with these people on your career plans:

	Strongly disagree		Neither agree nor disagree			Strongly agree	
a. Parents	1	2	3	4	5	6	7
b. Friends	1	2	3	4	5	6	7
c. Teachers	1	2	3	4	5	6	7

15. How important are these people's opinions to you in thinking about your career plans:

	Very unimportant		Somewhat important			Very important	
a. Parents	1	2	3	4	5	6	7
b. Friends	1	2	3	4	5	6	7
c. Teachers	1	2	3	4	5	6	7

16. How much do you agree with the following statements?

Strongly disagree	Neither agree nor disagree	Strongly agree
----------------------	-------------------------------	-------------------

1 2 3 4 5 6 7

17. My school considers the mastery of vocational skills to be more important than earning good grades.
18. My school stresses that what students learn needs to be useful in future work.
19. Most students in my school have a clear set of goals for their career.
20. The vocational skills I am learning in school are critical in finding a good job after I graduate.
21. My school places a lot of emphasis on vocational training.

22. I feel my school really cares about students.
23. My teachers rarely consider attending a vocational school as achieving at low levels.
24. Teachers in my school ask about students' career plans.
25. Graduates of my school find high-income, high-skill jobs.
26. My school is doing a good job in preparing me for future employment.

27. Most of my friends attend a vocational school.
28. My friends accept the fact that I am attending a vocational school.
29. There is a positive attitude about vocational education in place where I live.
30. I rarely hear people talking about vocational education negatively.
31. My family thinks that vocational education is useful for a young person like me.

32. My family never considers attending a vocational school as achieving at low levels.
33. I received a great deal of support from my family in choosing to attend a vocational school.
34. Vocational education trains students for low-income, low-skill jobs.
35. I have a clear set of goals for my occupation.
36. I think I will achieve the career goals I set up for myself in the future.

37. I think I will be able to find a job I want when I graduate.
38. I feel I have a number of good qualities.
39. I am satisfied with myself in general.
40. My goal in school is to learn more academic knowledge.
41. My goal in school is to earn better grades than other students in my class.

42. I have a higher motivation to study now than when I was in middle school.
 43. I like to go to school more than when I was in middle school.
 44. I find more usefulness in what I learn than when I was in middle school.
 45. I receive a great deal of support from people around me.

46. My expectations of the future are generally optimistic.
 47. School does not mean much to me
 48. School is important for my future.
 49. I can always complete homework on time.
 51. I have the courage to face the future.
 52. At times, I feel I am no good at all.

54. I am able to do things as well as most people other people.
 55. I am doing well in adapting to new the learning in vocational school.
 56. I am good at learning by doing.
 57 It feels easy for me to communicate with people.
 58. I think I have a high potential for doing a good job at work after I graduate.

17. Are you strongly hoping to see changes in any of the following aspects of your life?

	Not strong at all			Average			Very	
strong								
Materials aspect of your life	1	2	3	4	5	6	7	
Your family	1	2	3	4	5	6	7	
Your education and school related	1	2	3	4	5	6	7	
Your choice of job	1	2	3	4	5	6	7	
Your relationships/friendship	1	2	3	4	5	6	7	

18. Please recall your score on the high school entrance exam : _____

19. Let's say the average score on an academic course is 70, what score do you expect yourself to get?

let's say the average score on a vocational course is 70, what do you expect yourself to get?

APPENDIX D

问卷

这是一项关于青少年职业态度的研究，你的参加会极为有助于我们了解现在年青人的观点和想法，我们不把结果报告给你的学校或家长，请根据你的真实情况回答问题。

1. 你的性别: 女 男

2. 你父母的学历:

爸爸：(选一项)

- ☐ 小学
☐ 初中
☐ 高中, 中专或职校
☐ 大专
☐ 本科
☐ 研究生

妈妈:(选一项)

- ☐ 小学
☐ 初中
☐ 高中, 中专或职校
☐ 大专
☐ 本科
☐ 研究生

3. 你家庭平均每月收入大约是 (含第二职业): (选一项)

- ☐ 人民币500元以下
☐ 500与1000之间
☐ 1000与2000之间
☐ 2000与3000之间
☐ 3000与4000之间
☐ 4000以上

4. 你现在每周大约实习多少小时? _____ 小时/每周, 在学校上多少小时课? _____ 小时/每周

5. 你去年每周大约实习多少小时? _____ 小时/每周, 在学校上多少小时课? _____ 小时/每周

请在以下问题里，把最能代表你的数字圈出来：

6. 下面这些对你有多重要?

	一点也不重要				中等重要		非常重要
a. 获得更多知识.....	1	2	3	4	5	6	7
b. 得到好分数.....	1	2	3	4	5	6	7
c. 上大学.....	1	2	3	4	5	6	7
d. 以后找个好工作	1	2	3	4	5	6	7

e. 让父母高兴.....	1	2	3	4	5	6	7
f. 学到职业技能.....	1	2	3	4	5	6	7
g. 有很多朋友.....	1	2	3	4	5	6	7

上述哪一项对你最重要? _____

	一点也不 不喜欢			中等 喜欢			非常 喜欢
7. 总的来说, 你喜不喜欢上学?	1	2	3	4	5	6	7
8. 总的来说, 你喜不喜欢上文化课?	1	2	3	4	5	6	7
9. 总的来说, 你喜不喜欢上专业课?	1	2	3	4	5	6	7
10. 总的来说, 你喜不喜欢实习?	1	2	3	4	5	6	7
11. 你对下面的事情满意吗?	一点也不 不满意			中等 满意			非常 满意
你就高中教育做的选择.....	1	2	3	4	5	6	7
你的学业成绩.....	1	2	3	4	5	6	7
你的职业训练成绩.....	1	2	3	4	5	6	7

12. 与跟你年龄一样大的人相比, 你对你自己在以下方面怎么评价?

	比平均 差很多			平均水平			比平均 高很多
学业成绩	1	2	3	4	5	6	7
课外知识	1	2	3	4	5	6	7
和别人相处.....	1	2	3	4	5	6	7
智力	1	2	3	4	5	6	7
学习动力	1	2	3	4	5	6	7
职业前途.....	1	2	3	4	5	6	7
社会交往能力.....	1	2	3	4	5	6	7
职业技能	1	2	3	4	5	6	7
自己解决日常的问题	1	2	3	4	5	6	7

13. 和下面这些人交谈, 是否有助于你选择今后的职业?

	一点也 没帮助			略有 帮助			极有 帮助
你的父母.....	1	2	3	4	5	6	7
你的朋友.....	1	2	3	4	5	6	7
你的老师.....	1	2	3	4	5	6	7

14. 和下面这些人谈你今后的职业，你更同意谁的看法？

	一点也不 不同意				中等 同意		非常 同意
你的父母.....	1	2	3	4	5	6	7
你的朋友.....	1	2	3	4	5	6	7
你的老师.....	1	2	3	4	5	6	7

15. 下面这些人对你今后干什么的看法对你有多重要？

	一点也不 不重要				中等 重要		非常 重要
你的父母.....	1	2	3	4	5	6	7
你的朋友.....	1	2	3	4	5	6	7
你的老师.....	1	2	3	4	5	6	7

16. 你是否同意下面的说法？

	一点也不 不同意				中等 同意		非常 同意
在我的学校，掌握知识和技能比分数更重要.....	1	2	3	4	5	6	7
我的学校强调学生学到的东西要在以后的工作中有用.....	1	2	3	4	5	6	7
大多数同学在我的学校都有一套清楚的职业目标.....	1	2	3	4	5	6	7
我在学校学的职业技能在毕业找工作时很关键.....	1	2	3	4	5	6	7
我的学校非常强调职业技能训练.....	1	2	3	4	5	6	7
我的学校很关心学生的需要.....	1	2	3	4	5	6	7
我的老师从不认为上职业学校是成绩差、没出息.....	1	2	3	4	5	6	7
我校的老师常关心学生今后的工作打算.....	1	2	3	4	5	6	7
我校毕业生大多找的是高薪、高技能工作.....	1	2	3	4	5	6	7
我校在为我们将来找工作做准备方面搞得不错.....	1	2	3	4	5	6	7
我的多数朋友上职业学校.....	1	2	3	4	5	6	7
我的朋友很少讨厌我上职业学校.....	1	2	3	4	5	6	7
在我住的地方，职业学校在社会上的形象是正面的.....	1	2	3	4	5	6	7
我很少听人用消极语气谈及职业教育.....	1	2	3	4	5	6	7
我家人认为职业教育对象我一样的年轻人是有用的.....	1	2	3	4	5	6	7
我家人从不认为上职业学校是成绩差、没出息.....	1	2	3	4	5	6	7
在选择上职业学校的时候，我从家里得到很多支持.....	1	2	3	4	5	6	7
职业教育是培训学生从事低收入、低技能的工作.....	1	2	3	4	5	6	7

我有一套清楚的职业目标	1	2	3	4	5	6	7
我将来会实现我给自己定的职业目标.....	1	2	3	4	5	6	7
在毕业后我能很快找到一份我想要的工作.....	1	2	3	4	5	6	7
我在某些方面很有才能.....	1	2	3	4	5	6	7
总的来说，我对自己是满意的.....	1	2	3	4	5	6	7
我在学校的目标是学更多的专业知识和职业技能.....	1	2	3	4	5	6	7
我在学校的目标是学更多的文化课知识.....	1	2	3	4	5	6	7
和初中相比，我现在有更多的学习动力.....	1	2	3	4	5	6	7
和初中相比，我现在更喜欢上学.....	1	2	3	4	5	6	7
和初中相比，现在学的东西更有用处.....	1	2	3	4	5	6	7
我从周围的人那里能得到很多支持.....	1	2	3	4	5	6	7
总的来说，我对未来的期望是乐观的.....	1	2	3	4	5	6	7
学校对我一点意思也没有.....	1	2	3	4	5	6	7
学校对我的将来很重要.....	1	2	3	4	5	6	7
我总能按时完成学校要求的任务.....	1	2	3	4	5	6	7
放学后我常会在学校里多呆一会（比如参加课外活动、打球）	1	2	3	4	5	6	7
我有勇气面对未来.....	1	2	3	4	5	6	7
有时觉得自己一无是处.....	1	2	3	4	5	6	7
我幻想改变生活，重新开始.....	1	2	3	4	5	6	7
我相信自己能同多数干得一样好.....	1	2	3	4	5	6	7
我适应新环境的能力很强.....	1	2	3	4	5	6	7
我手脑并用的能力很强.....	1	2	3	4	5	6	7
与人交谈和沟通对我来说不是一件难事.....	1	2	3	4	5	6	7
我认为，我有潜力在今后工作中干得很出色.....	1	2	3	4	5	6	7

17. 在下列各方面，你有没有愿望要得到、改变或提高它们？

	没有 愿望			中等 愿望			强烈 愿望
物质生活（比如个人收入、穿戴等）	1	2	3	4	5	6	7
家庭生活（比如父母健康、与父母的关系等）	1	2	3	4	5	6	7

学校教育（比如专业成绩、其它竞赛等）	1	2	3	4	5	6	7
日后工作（比如选择未来职业、工作单位等）	1	2	3	4	5	6	7
人际交往（比如与朋友的关系等）	1	2	3	4	5	6	7

18. 请你回忆一下两年前你参加中考时，你的总分是 _____
19. 假如你所在班的各科文化课考试的平均分是70分， 你估计自己能得多少分
- 假如你所在班的各科专业课考试的平均分是70分， 你估计自己能得多少分

1=Very low 2=Low 3=Uncertain 4=High 5=Very high

[illegible]

APPENDIX F

TEACHER'S RATINGS (CHINESE)

请老师评价学生

尊敬的老师：这里有些能力和学生毕业后工作潜力相关。请用数字 1 到 5 来对你每个学生这几种能力做出评价。

1 = 很低, 2 = 较低, 3 = 平均, 4 = 较高, 5 = 很高

[illegible]

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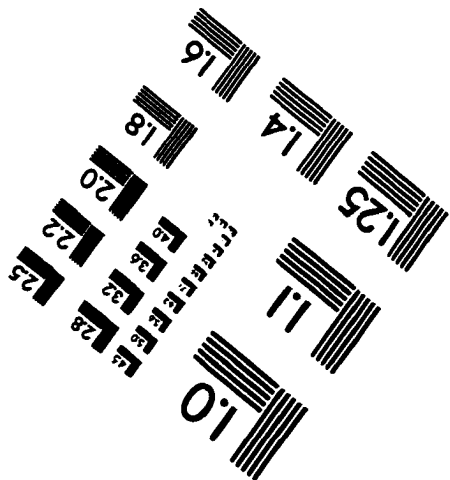
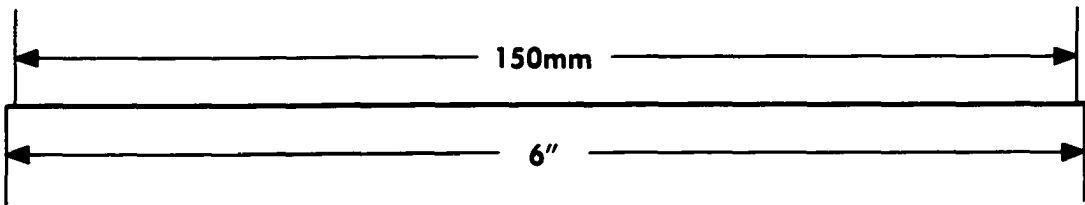
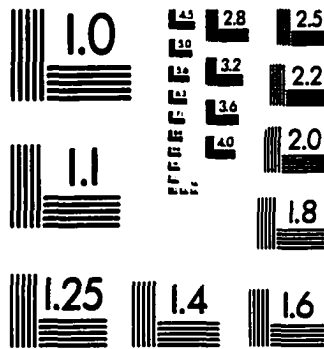
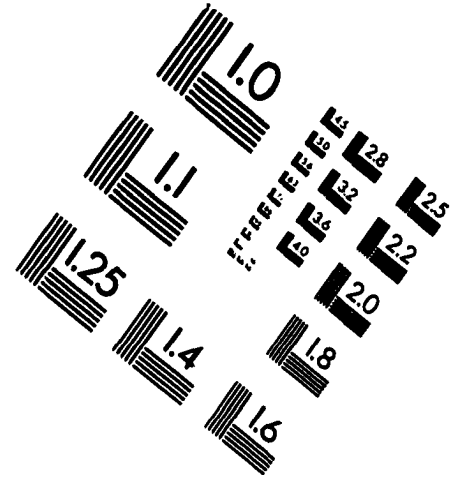
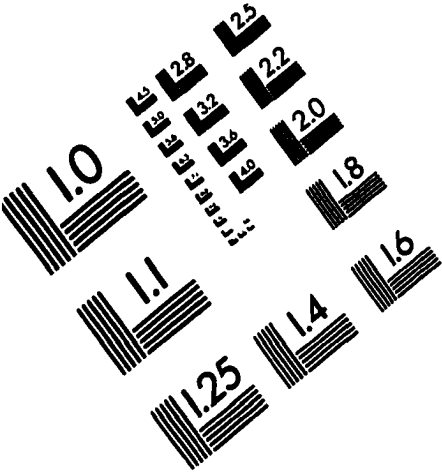
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IMAGE EVALUATION TEST TARGET (QA-3)



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