

# Historical and Contemporary Exam-driven Education Fever in China

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## Abstract

Evidence of education fever in China can be found from the 7th century through today. Both historical and contemporary education fever have been created, promoted and maintained by state-orchestrated systems of high-stakes and extremely competitive exams. This comparative study examines the educational and social consequences of both the historical Civil Service (Keju) exam system and the current National College Entrance Exam (NCEE) system in China. Although the two systems focus on different content domains and serve different explicit purposes – employment versus college entrance – both have led to profound effects on society. Similarities and differences in design features between the two systems were compared. A number of common positive and negative social consequences were identified. It was observed that exam-driven education fever in China has been gained at the expense of many unintended and often serious negative consequences. Education fever and these consequences are all manifestations of the much deeper driving force of the exams. Attempts to regulate education fever needs to focus first on controlling the stakes and reward system that goes with the exams.

Key words: Education Fever, National College Entrance Exam, Keju Exam, China

## 1. Introduction

Education fever refers to the phenomenon of a national obsession with education; particularly parents' feverish aspiration and support for their children's educational attainment and achievement (Kim, 2004). Evidence of such education fever in China can be traced back to the 7th century, or even earlier. Beginning in the 7th century, a formal civil service examination system known as the Keju 科举 system was implemented. Due to this exam system, Chinese government as well as literati began to promote education as one of the most important social institutions in their lives. One of the numerous pieces of evidence of this governmental promotion of education in ancient China is illustrated in the popular "Urge to Study Poem 劝学诗" written by Emperor Zhengzong 真宗 (986-1022) of the Song 宋 dynasty (Guo, 1994):

富家不用买良田,书中自有千钟粟。  
安房不用架高梁,书中自有黄金屋。  
娶妻莫恨无良媒,书中自有颜如玉。  
出门莫恨无随人,书中车马多如簇。  
男儿欲遂平生志,六经勤向窗前读。

*To be wealthy you need not purchase fertile fields,  
Thousands of tons of corn are to be found in the books.  
To build a house you need not set up high beams,  
Golden mansions are to be found in the books.  
To find a wife you need not worry about not having good matchmakers,  
Maidens as beautiful as jade are to be found in the books.  
To travel you need not worry about not having servants and attendants,  
Large entourages of horses and carriages are to be found in the books.  
When a man wishes to fulfill the ambition of his life,  
He only needs to diligently study the six classics by the window.*

Today in China, just as had been the case for in the past 1400 years, the idea of “万般皆下品,唯有读书高” (All pursuits are of low value; Only studying the books is high) is still the dominant view of education (He, 2000). According to the China Education and Human Resource Report, in 2003 family expenditure on education amounted to 12.6% of the family budget and surpassed both housing and clothing to become, after food, the second highest expenditure in Chinese cities (Ministry of Education, 2003a).

Before we can begin to identify the pros and cons of education fever in China, we need to analyze what has been the driving force behind such education fever and the pros and cons of this force. If the driving force induces a desire for education and learning in children, among parents and in society in general, it may be beneficial to everyone. However, there is evidence

that this driving force, in fact, introduces extraneous variables that can lead to undesirable outcomes and side effects. In some situations, it might even discourage its intended effect of encouraging learning.

It can be discerned that both historical and contemporary education fever in China have been caused, promoted and maintained by state-orchestrated systems of high-stakes and extremely competitive exams. The driving force behind the historical education fever was the Keju examination system, the purpose of which was to select high officials to serve the Emperor. The force behind modern day education fever, on the other hand, is the National College Entrance Exam (NCEE), known as Gaokao 高考, which was developed for the purpose of selecting students for higher education, which is commonly believed to be a critical step for upward mobility. Many studies have been done on each of these two systems individually and have demonstrated the relationship between the importance of these exams and the consequential importance placed on education (e.g., Elman, 2000; Guo, 1994; Martin, 1870; He, 1998; Chen, 1997). However, except for Feng's (1994) comparative study between these two systems in terms of the dynamics of political centralism, there have been few comparative studies that examined the educational and social consequences of these two testing systems. In this study, these two educational testing systems – the Keju and the NCEE – are compared in order to better understand not only the education fever phenomenon but also the consequences of these systems on education.

## **2. Summary of the Keju exam system<sup>1</sup>**

The Keju examination system is commonly regarded as having started around the year 606 and was officially ended in 1905, for a total of 1,299 years. During this time, the exams became the central focus of a state-orchestrated system of high-stakes employment tests and test-driven education. Through these exams, Chinese emperors identified individuals who would initially serve as scholars in the imperial secretariat known as the Hanlin Academy 翰林院. From these positions, the scholars might be promoted to serve as district magistrates, prefectural governors, provincial governors, national departmental ministers or even prime ministers/grand councilors. These exams were used to select individuals for high-level, high-power positions; along with all the prestige, legal privileges and advantages, power and financial rewards for the candidate and the entire extended family and ancestry that came with such positions. The stakes were extremely high for the candidate.

In its most common and stable form, the exams, which included Confucianism, poetry, official documents and national policies, consisted of three progressive levels: local district exam, provincial exam and palace exam. First, a candidate took the local district/prefectural exams known as the tongshi 童试/院试. These exams were given once every two years. Next level was the provincial exams called xiangshi 乡试, which was given once every three years at the

provincial capital. The third set of exams took place in the national capital and was given the spring after the provincial exams. This third level consisted of two steps: The “joint” exams called huishi 会试, to be followed by the palace exams, dianshi 殿试. One can take these exams as many times as desired. The system was open to all males. However, in its early years during the Sui 隋 and Tang 唐 dynasties (589-907), to be eligible to take the exams, each examinee was required to identify an official who had agreed to serve as his mentor. This requirement was removed starting from the Song 宋 dynasty (960-1279).

Both the earliest district/prefectural exams and the final palace exams were one-day-long. The provincial exams and the joint exams in between, however, were very harsh experiences. Each of these two sets of exams was nine days and nine nights long. The nine days/nights were divided into three sessions; each three days and three nights long.

### 3. Summary of the NCEE system<sup>ii</sup>

The NCEE, or Gaokao, is a similarly highly centralized testing system in China today. High school students across the entire country take the NCEE on June 6, 7 and 8 every year. They would then be admitted into different universities solely based on their NCEE test scores. The tested subjects of the NCEE have been revised a number of times since the early 1980s. The latest reform introduced the “3+X” system. This system requires all students to take exams on three common areas: Chinese language, mathematics and foreign language. Additionally, examinees are to take an additional comprehensive test on either art or science, dependent on the track chosen by the examinee. Examinees who choose the liberal arts track, Wenke 文科 would take the additional exam on “comprehensive art”, wenke zonghe 文科综合, which includes history and civics/political science. Examinees who choose the science/engineering track, Like 理科 would take the additional exam on “comprehensive science”, like zonghe 理科综合, which includes chemistry and physics. Consequently, each student is to take exams in a total of four areas. This system was first tried out in Guangdong province and was subsequently implemented throughout the nation within 3 years (MOE, 2001).

To answer each question in the “X” portion of these exams, the student needs to use knowledge in both history and civics/political science or in both chemistry and physics. The goal of this reform was to encourage students’ to develop abilities to solve problems rather than to recite formulas. In each exam, multiple-choice, filling-in-blanks, true-or-false and short-answer questions are included. Essay questions are used in the exams for Chinese language and those for foreign language.

Based on scores on the NCEE, students are admitted into four hierarchical levels of colleges and universities. The most coveted universities are those referred to as National Key Universities, next are Provincial Common Universities, lower yet are the Local Common Universities; which are followed by the least desirable 2 or 3-year-colleges. A college education, particularly one in a

national key university or provincial common university is viewed as critical for personal advancement and economic success in China today.

#### **4. Design similarities between Keju and NCEE**

Although the Keju exam system was discontinued in 1905 and on the surface the NCEE is not related to the Keju, the two systems are similar in design and process in many aspects. These include design features such as a central state-orchestrated administration, a standardized process, large-scaled testing, high-stake testing for the examinee, a hierarchical quota system and a high level of security for both test contents and test process.

Both the historical Keju and the contemporary NCEE have been administered by the central government. The Keju exam was a major function of the Department of Rites, *libu* 礼部, one of six administrative departments directly under the emperor, in imperial China (Teng, 1967). Similarly, the NCEE is a major administrative function of the central government of China today. Specifically, the National Education Examination Authority (NEEA), within the central Ministry of Education, is directly responsible for the design, administration, scoring and evaluation of NCEE (Sec.2 (20), Law of Education, 1995).

The Keju exam system not only implemented uniform procedures but also standardized its format. It included the same three progressive levels: local district exam, provincial exam and metropolitan/palace exams for all examinees. *Baguwen* 八股文 (eight-legged essays) and *Shitishi* 试帖诗 (standard exam poems) were two standardized testing formats for essay and poetry. Both of them had to be written to conform to particular rules, including rules on the number of sentences; format, length and style of each component; and rules for rhyming, symmetry and tonal balance and “couplet” styles. There were also strict limits on the total number of words for the overall essay (Qi, 1999; Zhang, 2002). Additionally, precise administrative procedures, exam settings and scoring procedures were all rigidly prescribed. Similarly in the NCEE, the unified procedures such as the test date, arrangement of test sites and admission process apply to the whole nation. More than these, the standardized formats include multiple-choice and detailed rubrics for open-ended questions. Rigid procedures are prescribed for every aspect of the entire test development, administration, and scoring process as well.

Both the Keju exam and the NCEE are large-scaled testing system. Based on several sources (Chang, 1955; Ho, 1962; Wainer & Braun, 1988), it can be estimated that millions of examinees took the Keju exam during every 3-year cycle at the height of the Keju system during the Qing dynasty. In the case of the NCEE, millions participate every year. By 2003, the number of examinees reached 6 million (MOE, 2003b).

The stakes involved are very high for the test-taker in both the Keju and the NCEE system. In the Keju exam system, successful examinees would be appointed to minimally the position of

a district magistrate, from where individuals can be promoted through the bureaucratic ladder to potentially become a grand councilor/prime minister. In the current NCEE system, students' NCEE scores are the only determinant of the university to which they are to be admitted. Different universities will strongly influence students' future job opportunities, salaries, career path and power.

Both systems use a quota system to determine the number of passers. In the Keju exam system, the number of candidates passing each of the three levels of the exam was based on assigned quotas for each province, taking into consideration population density, regional balance, and various political factors. Similarly, the NCEE system assigns quotas to provinces. Specifically, each university is assigned by the Ministry of Education a quota of students to be admitted from each province. These quotas take into consideration the number of high school graduates in each province, the quality of secondary education in each province, opportunities for students in less-developed remote areas and students from ethnic minority groups.

Measures against cheating and test security in general were major concerns in the Keju system. Severe punishments were meted out for people caught cheating, including caning or being placed in stocks for a month; and in all cases barred from taking the exams for life. Other measures include specially built prison-like exam compounds that could accommodate up to 22,000+ examinees with armed guards and with thorny bushes planted around the outer walls (Chaffee, 1995), very strict search procedures, very strict exam procedures, grouping candidates in small groups responsible for each others' behaviors, watch towers, strict rules and specifications regarding clothing and what could be brought to the exam compound, close constant proctoring, anonymity in scoring through concealed names and the use of copyists, sequestering examiners prior to exams, and so on and on. The NCEE system shares many of these same concerns and includes many very similar measures. For example, item writers are sequestered in a secret location with no contact with family or the outside world while constructing test items. Test items are printed by prisoners who are either serving life sentences or are on death row. In either case, only prisoners in maximum security prisons in remote areas are used. Examinees are randomly assigned to one of many test sites (usually a school building) throughout a city or a county. During test administration, each test site is quarantined and all doors and windows are sealed. Each classroom only holds 20 examinees and the seats are randomly assigned. Exam proctors are assigned to the classroom only immediately before testing begins in order to avoid being bribed by test takers in any specific classroom. During the test, examinees are only allowed to bring the necessary stationary. The answer sheet of any examinee is different from anyone next to him or her. If there is any cheating in the NCEE process, the students involved will lose the opportunity of taking the NCEE permanently and further more, the examiners involved will be dismissed from their positions.

## 5. Systemic differences between Keju and NCEE

In spite of the major similarities in design between the two systems, they do have several important design differences. Specifically, they are different in terms of the manifest purpose of the exams, in terms of the exact knowledge domain being tested, and in the stakes involved for the teacher.

The purpose of the Keju exam system was to select talented people to help the emperor rule the nation; and that of the NCEE system is to select qualified students to receive higher education. Admissions to the imperial university in ancient China and other institutes of higher learning in ancient China were not based on the Keju exams, but were primarily based on nominations, sponsorship and “purchases”. Thus, the apparent purpose of the Keju system was employment in the imperial bureaucracy. Results of these exams were not used for any other purposes. The NCEE system, on the other hand, serves multiple purposes. In addition to its primary purpose of serving as an admissions test for college, it also serves to evaluate schools, teachers, and the general quality of education.

The original intent of the Keju exams was to select for national offices men of virtue who lived exemplary lives consistent with the ideals outlined in Confucianism. In practice, the most important knowledge domain tested by the Keju exams was knowledge of contents of nine classic texts of Confucian philosophy, called the four books and five classics 四书五经. The four books included Great Learning 大学; The Doctrine of the Mean 中庸; The Analects 论语; and Mencius 孟子. The five classics included the Book of Changes (I Ching) 易经; Book of History 书经; Book of Odes 诗经; Book of Rites 礼记; and Spring & Autumn Annals 春秋. In addition, candidates were tested on the composition of poems and poetic prose; on the writing of official and judicial documents; and on views regarding national policy issues.

The NCEE system also has the lofty goal of selecting “youths for higher education who are morally trustworthy, academically well-prepared, and physically healthy, based on quota and test scores” (National Education Examinations Authority, 2003). In practice, the exams only select students who are academically well-prepared in a few specific subjects. The test domain of the NCEE covers modern social and natural sciences. Through various reforms in NCEE over the last several decades, the three basic subject areas – Chinese language, foreign (mostly English) language and mathematics – have constantly remained three major areas of focus (He, 1998). Besides these three subjects, for the liberal arts branch, students have to choose from politics, geography or history as the fourth subject or the “X” described earlier in this paper; while for the Science branch, students have to choose from chemistry, physics or biology or the “X”. Beginning in 2002, in Beijing and several provinces, “X” was modified to comprehensive Art (combined history with politics together) or comprehensive Science (combined chemistry and physics together). This was done in order to decrease the number of tested subjects and testing time. There are apparent differences in knowledge domain being tested by the two systems. For example, mathematics is tested in NCEE while it was not under the Keju. On the other hand,

Confucian philosophy and poetry were tested in Keju but not under NCEE. Chinese language, history and politics were tested by both in different formats. Foreign language and physical sciences were not tested under Keju for most of its existence; except for the last two centuries at which time these topics were occasionally tested indirectly as part of a general policy essay. There were also occasional specialized Keju exams in the last two centuries to identify translators in which foreign languages were tested. These were generally small-scale, ad hoc administrations dependent on need.

Historically, in order to prepare candidates for the Keju exams, provincial and national schools along with other forms of formal education institutions were established by the central government. Most children however attended small private schools organized by villages or wealthy landowners. Due to the philosophy of Confucianism, teachers in all of these schools were highly respected – even the not-so-competent teachers were respected. The value system was such that failure was almost always blamed on the student for not putting forth enough effort; and occasionally on the officials for not being fair. The teachers' competency was rarely questioned. This is not the case for today's NCEE system. In contrast, for the NCEE, students' parents and society in general hold teachers and schools accountable for the students' performances. Parents demand "experienced" teachers in the high schools of their own children. Within the same school, parents compete to have their children being taught by the best teachers who are believed to have the ability to elevate their own children's scores on the NCEE exams. Teachers have become the central focus of demands and pressure from all sides: students, parents, school administrators, and society at large. If a large number of students under a particular teacher passed the NCEE, that teacher would gain great respect from the community and monetary reward from the school. That teacher would also be in high demand (He, 2000). However, if a low number of students passed the NCEE, especially if the number was less than that of the previous year, the teacher would be blamed as "inexperienced." Being "inexperienced" too often could potentially lead to the loss of opportunities for promotions and worse yet the loss of their teaching positions. Further, the use of NCEE results to evaluate teachers' performances has led to a natural chain reaction along the line. The university NCEE-score-determined admissions/passing rate of the students from a particular high school has become the single most important factor in evaluating the performance of the school (He, 2000; Zhai, 2004). If the admission/passing rate of a school is considered unsatisfactory by parents and by the local media and local community in general, the school, the teachers, and the administrators are all to be blamed. The administrators, not just the teachers, are also at risk of being dismissed from their current positions.

Consequently, whereas competitions among schools were unheard of in ancient China; under the Keju exam system, schools in China today are competing against each other in attempts to raise their NCEE exam scores. To do so, they compete against each other in attempts to attract more talented students to help them raise their passing rates. They also compete against each other in raising funds in order to hire better and more "experienced" teachers.



## **6. Common Social Consequences of Both Systems**

Although the Keju and the NCEE systems share a number of similarities in design while differ in several features, the fact that they are both high-stakes tests has led to many common intended and unintended social consequences. The most apparent common consequence is that the phenomenon of educational fever has been maintained throughout China for over 1,400 years. Several other unintended social consequences can also be observed.

### 6.1 Perception of meritocracy

Both the Keju and the NCEE systems have been considered by the Chinese society-at-large as being fair and equitable and have been generally viewed as the only means for upward mobility for a poor person. Both systems were viewed as a meritocratic solution to the widespread problems of nepotism and corruption in the nomination system that had preceded them.

One of the original intents of the Keju exam system was to “reduce the privileges of the hereditary aristocrat families that threatened the imperial autocracy” (Feng, 1994). Prior to the Song dynasty (960-1279), official appointments in imperial China were primarily based on nominations by existing officials. Since Song dynasty, the Keju exam system was opened to all citizens without any need for official nomination or sponsorship. This not only minimized nepotism in officialdom, it also provided an important ladder for success for common citizens (Ho, 1962) in an otherwise closed social stratification system. The Keju exams were thus generally viewed as the only means of upward mobility in imperial China.

In the early days of the NCEE, many scholars (Yang, 1997; He, 2000, Feng, 1994) regarded the NCEE as having helped to select excellent people for the reconstruction of the newborn nation. It was even viewed as a symbol of equity and justice at the end of the Culture Revolution in 1977 because the NCEE terminated the nomination/recommendation system that had resulted in widespread nepotism (Wang, 2001). Even though the NCEE is only for the selection of people to receive higher education rather than being offered prominent administrative positions in the civil bureaucracy, successes in the NCEE system would lead to a college education in a prestigious key university, which in turn would lead to career successes. But that is not the only form of upward mobility. High test scores in the NCEE provide students from poor rural areas a legal resident status, called hukou 户口, in wealthy metropolitan areas, where most key universities are located. This legal resident status is the prerequisite for people to live and work in relatively wealthy metropolitan areas and is otherwise very difficult to obtain. Therefore, high test scores also mean the opportunity for migration to urban areas. This migration is often viewed as the only means for upward mobility for residents in poor rural areas.

Unfortunately, not all people can pass Keju or NCEE. Therefore, both the Keju and NCEE systems function as a sorting machine which filters the people into those who pass and can

move upward in the social stratification with a bright future and those who fail and will need to stay at the lower rungs of the social ladder with a higher uncertain future. Eventually, the two testing systems unintentionally promote the polarization of society.

## 6.2 High social prestige for successful examinees.

Under the Keju system, being a *zhuangyuan* 状元 (the top ranked examinee in the nation) has been the dream of most youngsters. Numerous touching Horatio Alger-like stories of rags to riches through successes in the Keju exams to eventually becoming a *zhuangyuan* have been widespread. The value of success through exams has been well-integrated into Chinese culture. Within the hierarchical Confucian society, overall class, power and status were generally reflected by officialdom in the administrative bureaucracy which was to be gained through the Keju exams. Being a successful examinee, even without gaining an administrative post, was sufficient to move up the social ladder in terms of prestige and status. Successful examinees at the national level were paraded through the capital, their own homes were marked with special prestigious plaques and banners, and their names were carved onto stone steles erected on the grounds of the Confucius Temple in Beijing to be honored by all for eternity.

The glory of being successful in exams continues today under the NCEE. Getting a high NCEE score and entering the national key Universities are the dreams of almost every high school student and families. The glory of being admitted into top universities can rarely be overemphasized. Take the rural Pingchang 平昌 county area in Sichuan 四川 province as an example: In 1995, for the first time a student in that county was admitted into Renmin University of China 中国人民大学, a national key university, in Beijing. The local television station produced a special program about this event and the mayor of that county himself paid a special official visit to the student's home to formally congratulate the family (Luo, 2002). Top scorers on the NCEE are similarly glorified today as were those under the Keju system. Names of top NCEE scorers are frequently posted locally at public places in many cities to honor their successes in the exams. In 2003, there was in fact an attempt to restart the ancient Keju tradition of parading top scoring examinees through Beijing. Currently, a project is underway to have the names of top NCEE scorers since 1978 carved on new stone steles to be erected along side those for the successful Keju candidates for the last 700 years in the Confucius Temple in Beijing (Zhao, 2004).

## 6.3 Narrowing of the curriculum

It is generally known that high-stakes exams will drive curriculum. Subject matters that are being tested will be taught and students will try to learn them well. However, subject matters that are not tested, no matter how valuable, will be ignored or de-emphasized and students will not wish to spend too much time learning them. In China today, it is a common practice that

only tested subjects are offered in Grade 12 in order to fully prepare for the NCEE. For lower grade levels where untested subjects are taught, both teachers and students treat the tested subjects and untested subjects, such as geography and biology, differently: “Students skipped the classes of untested subjects or they just reviewed the materials for the tested subjects in these classes” (Feng, 2002).

When we take a longer view by looking at the historical Keju exam, we find that the high reward that came with doing well in the exams also directed the overall society to value skills that were tested and to ignore skills that were not tested. Consequently, subject matters that are tested were not only taught and learned, but were valued by society, while all other skills are at best de-valued. Under the Keju system, one of the areas that had suffered from neglect as a result of the exams was the area of medicine. Suen (in press) demonstrated that medical talents since the implementation of the Keju exam system had been diverted to studying Confucianism and preparation for the exams by the high-stakes of these exams and the education fever that ensued. It is not possible to assess the degree of loss in medical developments had the exam system not been in place; but it is quite reasonable to conjecture that a great deal was lost. Similarly, technological developments in China were also impeded by both the diversion of attention toward the study of Confucianism and poetry and the basic de-valuation of technology within the Confucian philosophy. Finally, even within the subject tested, the exam favored only certain aspects that were easily testable. Other aspects of the same subject would suffer from neglect. An example within the Keju system was the testing of poetry, which, as a form of artistic expression, continued to flourish in China for 1300 years. Other genres of artistic expression, including plays, dramas, operas and novels, were not well-developed until there was a moratorium on the Keju exam or until there was a temporary stop on the testing of poetry for several hundred years (Suen, in press).

#### 6.4 Peripheral counterproductive activities

While an exam-driven education system may help to promote education, it also promotes many non-productive activities that distract energy and effort away from education and learning. In the case of the Keju system, we know, for example, that within the first century of these exams, there were already complaints that examinees only memorized by rote previous successful model essays and only rephrased them when taking the exams. Subsequently, instead of promoting the understanding of Confucianism, the result was the practice of memorization of model essays. This practice continued throughout the 1300 year history and became even more widespread since the early Ming 明 (1368-1644) dynasty (Chow, 2004) when inexpensive large-scale commercial printing presses became available. Model essays were collected and published and became very popular instructional materials, in spite of repeated attempts by the central government to make it illegal to publish and distribute such model essays. In addition to these model essays, there were also many books that could best be described as “test-coaching”

books. These were books designed to help a student to improve test-taking skills. They taught students “tricks” to writing essays and poems in the required styles, which were standardized styles used only in the Keju exams and nothing else (Qi, 1999). Such knowledge only served to improve exam performance without improving learning of the Confucian classics.

In contemporary China, buke 补课 (test coaching and extra hours tutoring) are the common methods to improve test scores. Although the Ministry of Education required all high schools to cancel all extra hours tutoring, many students and parents are still looking for experienced teachers to serve as private tutors. These tutors focus on teaching students efficient strategies to answer questions in the NCEE (Zhai, 2004).

### 6.5 Side effects on the learner

Although the aim of the exam-driven system is to promote a general enthusiasm toward education and toward the joy of learning, the ultimate measure of success for the individual is in fact his/her performance on the exam. The high-stakes exam-driven system is coupled with an award system in such a way that there will be a limited number of awards. In other words, a number, often large, of learners will fail the exams; in spite of the general education fever. In a society where there is a heightened level of education fever and where successes in exams are highly valued, the effects of failing the exam on the learner will be devastating. In the case of the Keju exam system, the overwhelming majority of the examinees would fail to attain the ultimate coveted jinshi title, which was needed to obtain official appointments. Similarly, in NCEE, the overwhelming majority of the examinees will not be admitted into the coveted national key universities.

For both systems, candidates could take the exams as many times as they wished. Over time, after repeated failures, a large proportion of these candidates would become disillusioned. Instead of producing a nation of scholars interested in learning under the phenomenon of educational fever, the system could very well have produced a nation of disillusioned and cynical individuals. First, we can observe the phenomenon of career-examinees under both systems. Given that one could take the exams as many times as possible and further given that the rewards were so high, many people kept trying. As a result, there were many career-examinees under the Keju system whose entire occupation of their lives was taking exams. Chinese history is filled with candidates taking these exams until they were well into their 70's and 80's; until they were physically no longer able to participate or until they died. For example, Chen (1993) reported the case of Gong Chengyi 公乘亿 who took the exams 30 times until he died. From record, we know of the case of Lu Yuncong 陆云从 who took yet again and failed yet again the last exam of his life in 1826 when he was 103 years old. Many of these lives may be considered wasted, as all these individuals ever did was to prepare for the exam and to take the exams repeatedly. In the case of the NCEE, although the average admission rate for all levels of universities across the whole nation has increased to 60% in 2003 (China Central Television

International News, 2003), the admission rate for key universities especially in several provinces with huge population but limited quota is still very low (Li, 2002). Take Guangxi 广西 province as an example, the admission rate for the university level in 2003 is only 25% (CCTV International news, 2003). For students who failed the NCEE, especially before the 1990s when the admission rate was only 15%, it was common for many students to retake it year after year. Some students did not give up until they have tried more than 5 years continuously (Dai, 2002).

Second, repeatedly failing the all-important exams, which had been greatly promoted by the state and the general education fever of society, must have taken a severe psychological toll from the failed candidates. Minimally, there would be serious problems of self-doubt and poor self-esteem. Effects of failure on the Keju exams have ranged from mild cases of self-doubt to various psychopathologies and in some cases to suicide or physical violence to others. There have been many recorded cases of psychological problems of delusions and illusions and various forms of insanity in the history of the Keju system. Many of these individual cases have been described by Chen (1993), Elman (2000), Liu (1996) and Miyazaki (1976). These psychopathological illusions and behavioral problems were also the subject of many novels including two classic novels: *Liaozhai zhiyi* 聊斋志异 (Strange Stories from a Chinese Studio) written by Pu Songling 蒲松龄 in the 17th century and *Rulin Waishi* 儒林外史 (The Scholars) by Wu Jingzi 吴敬梓 in the 18th century.

Similar stories can also be found in the current NCEE system. Although each year before the NCEE begins, a large variety of psychological advices are provided by schools, and via the public media, many students have continued to get neurasthenic symptoms before the NCEE. More and more high school students have to look for sedative medicine in order to get to sleep before the exam. Some students have committed suicides due to the high pressure from the NCEE (He, 2000). In other words, another by-product of the exam-driven education system was the generation of a whole class of exam-induced psychopathology and a large number of mentally ill individuals.

## 7. Observations

Education fever is not a new phenomenon in China. Paying great attention to education has been deeply integrated into Chinese culture with the influence of Confucian philosophy over more than 2000 years. Under the surface of education fever, high-stakes examinations have been and continue to be the hidden driving force. Education fever in China is in fact fever for successes in exams.

The Keju system has been commonly praised by historians and psychometricians alike as being reliable and sophisticated (e.g., Martin, 1870; Dubois 1964, 1970) and was adopted in different forms by various nations including Korea, Vietnam, England and the United States in the form of civil service examinations (Liu, 1996). Similarly, the NCEE was trusted by Chinese

people as a fair and reliable mechanism to select the most talented people to enjoy the limited higher education resources, and to replace subjective recommendations, nepotism and corruption during the Culture Revolution period (He, 2000). It is also commonly recognized that during its early stages, the NCEE system had helped to raise the academic standards in high schools.

However, unintended consequences emerged over time. These changes are due to several fundamental characteristics of exam-driven education systems. First, because the stakes are so high and the consequences of doing well on the exams are so important, the fever is no longer on learning and education as an end in itself; rather, the fever is toward doing well on the exams. Although studying and learning and education fever are the orthodox route to doing well in the exams, it is not the only way. Many peripheral counterproductive activities can also lead to good performance on the exams. For instance, the fever toward doing well on the exams, instead of leading to enthusiasm toward education, can lead to a great deal of effort expended on non-productive or counterproductive activities such as cheating, test coaching, and teaching toward the very specific content or style of test questions. Therefore, the adverse social and educational consequences, which are the unavoidable by-products of the test itself, cannot be ignored.

Further, as an examination, in its pure conceptual form, it is basically a passive, standardized, and hopefully fair way to measure human knowledge and ability. It is conceptually an innocuous measurement tool and procedure similar in function to the use of the string, the ruler or the scale to measure length or weight. When an examination is coupled with a reward system such that much is to be gained by doing well on this examination and much is to be lost when one performs poorly on this exam, the function of the examination has changed. It is no longer a simple innocuous measure, but is an important social tool in the overall reward/punishment system. This reward system, on the one hand, drives education and induces a general enthusiasm toward education, while on the other hand it becomes an active social force, a powerful sorting machine, which can potentially change the behaviors of the prospective examinees, the parents, and society in general. Some of these changes might be intended while others might be unintended. Some of these changes are consistent with the overall goal of society and of education, while others are not. That is, exam-driven education fever may be gained at the expense of many other unintended negative consequences.

For both the Keju and the NCEE systems, we can infer that shifting from one exam system to another cannot stop the education fever, or more accurately, the fever for successes on exams. What is more, it is unlikely that education fever can be regulated via policy changes per se. In fact, many methods have been tried to remove the high stakes of NCEE in current China: such as expanding the enrollment number in college and promoting private colleges (Liu, 1999). These methods helped more students to receive higher education but at the same time, the quality of higher education decreased and the job market becomes full (Deng, 2001). As a logical next step, there is now a trend toward "Graduate School Entrance Exam fever" (Yang, 2003). Therefore, changes have to come from a shift in the value system, expectations of reward

from alternative routes, and a realistic understanding of the value of education. So long as the driving force of the exam is in place, the frenetic education fever phenomenon cannot be regulated. Education fever is only a manifestation of the much deeper driving force of the exams. Attempts to regulate education fever needs to focus first on controlling the stakes and reward system that go with the exams.

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<sup>1</sup> For detailed accounts of the developmental history of the Keju system, see Chaffee (1995), Elman (2000), Guo (1994), Ho (1962), Liu (1996), Miyazaki (1976) and Teng (1967).

<sup>2</sup> For detailed accounts of the developmental history of the NCEE system, see Feng (1994), He (2000) and Yang (1997).

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