

An Introduction to the System and Culture of the College Entrance Examination of China

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Introduction

On June 7 and 8, 2006, more than 9.5 million high school graduates throughout China took the annual college entrance examination (CEE) (Dai Jiagan, 2006). Students took four of five subject tests over the two-day period: a Chinese language test and a mathematics test during the morning and afternoon, respectively, of June 7; and either a synthesis test for the liberal arts track or a synthesis test for the science and technology track during the morning of June 8, and a foreign language test during the afternoon of June 8. The morning tests were 2.5 hours long while those given in the afternoon were 2 hours.

Although the first subject test of this year's CEE, the Chinese language test, was scheduled to start at 9 a.m., the author observed parents, relatives, and examinees gathered outside the campus gate of the People's University Affiliated Middle School in Beijing by 7:30 a.m. Eavesdropping on various conversations revealed a wide spectrum of wishes: "Do not be too nervous, OK? You will do fine," "Don't be too careless. And read the items carefully," "You have worked hard for an entire year and the real tests are here. Make yourself and us proud," and "Work on the test items carefully. Your future depends on these tests. I know that you will do well."

Outside the campus gate stood a row of large white display boards reminding examinees of the test regulations, examinee obligations, and examples of violations. An ambulance was parked beyond the signs in a corner of the entrance square, ready to tend to any emergency, and an air-conditioned recreational vehicle welcomed anyone wishing to seek temporary refuge from the early summer heat. Uniformed campus security guards checked the test registration and

personal identification cards of examinees filing into the restricted areas of the campus. The only items permitted were bicycles for personal transportation and test kits containing pens, pencils, erasers, and rulers. Before reaching their designated test rooms, examinees walked along a shaded path lined with large wooden boards displaying both welcomes and reminders.

During the CEE season, there is widespread public support for examinees. News reports have described police running red lights in order to transport an examinee to a test site on time (Law-star.com, 2005), helping examinees to fetch their identification cards from home (Dahew.com, 2005), and even helping, with permission, to get into an optometrist's office to fit a pair of glasses for an examinee (People.com.cn, 2004). The author saw an illegally parked car around a corner of the entrance square with a sign saying "CEE Examinee, please pardon me." It was not ticketed, even with a heavy traffic police presence.

Long after 9:30 a.m. scores of parents could still be seen sitting on the sidewalk outside of the middle school, anxious to see their children upon completion of the exams.

History of the College Entrance Examination of China

China held its first national imperial examination—"Ke Ju"—as early as 605 CE in the Sui dynasty. This imperial examination was considered the world's first standardized educational examination, and its purpose was to select civil service officials

(Wikipedia, 2006). Imperial examinations lasted more than 1,300 years, until 1905 during the Qing dynasty when they were disrupted by internal uprisings and foreign invasions. Modern college entrance examinations were introduced in the Republic of China and continued into the People's Republic of China until 1966 when the so-called Cultural Revolution began.

In addition to devastating China's economic, scientific, and technological developments, the Cultural Revolution plunged the entire education system into chaos. High school graduates were sent to the countryside to be reeducated by peasants. China's college entrance examinations were completely abolished, and between 1966 and 1968 its universities and colleges were almost completely shut down. Between 1969 and 1976, China's higher education system was partially restored when workers, peasants, and soldiers—social classes that were highly regarded by the government—were permitted to enroll. Without college entrance examinations, many students who had only an elementary education attended Chinese colleges and universities.

The 10-year Cultural Revolution ended in 1976 when Mao Zedong, then chairman of the Chinese Communist Party, died, and Deng Xiaoping came into office. As one of his sweeping reforms, Deng comprehensively and swiftly reinstated China's system of college entrance examinations and university education. The year 2006 marked the thirtieth anniversary of the official end of the Cultural Revolution and the twenty-ninth anniversary of the reestablishment of China's college entrance examination system, which now tests the largest numbers of college applicants in the world (People.com.cn, 2006).

Importance of the College Entrance Examination of China

To Americans familiar with college entrance examinations in the United States, the high-stakes atmosphere surrounding the CEE may seem hard to believe. College entrance examinations in China (and in several other Asian countries such as Korea and Japan) are so important that they are commonly dubbed “once in a lifetime” or a “one-test-to-determine-a-life” for most high school graduates (China Science and Technology University, 2006; China Youth on Line, 2006a).

The importance of China's CEE in the lives of high school students is difficult to overestimate. First, it is offered only once a year. If a student misses it or fails to perform to

expectations, he or she has to wait an entire year to retake it. Second, given the high demand for technical skills and the fierce competition for employment in China, a college education is critical to securing a lucrative job. Third, given the enormous number of CEE examinees and the relatively small number of examinees admitted to college—especially into the more prestigious first-tier universities—the competition for high CEE scores is intense. Finally, in order to maximize the chance of CEE success, most high school students spend most of their senior year studying tirelessly for this exam. Such test preparation normally means 12 to 16 hours of rigorous daily routines of study, review, practice tests, and organized competitions on simulated CEE tests, often leaving little time for leisure activities (Sina.com, 2006a). Students are often unable to participate in serious sports activity because schools are afraid of injuries that may prevent students from participating in the CEE.

Of the 9.5 million examinees in 2006, only 2.6 million (about 27 percent) were admitted to four-year universities. Another 2.7 million (about 28 percent) were admitted to three-year or lower colleges and technical schools (China Education and Research Network, 2006a), and 4.27 million (about 45 percent) of the entire 9.5 million examinees were not admitted to any institution of higher learning. Many students who do not succeed in a given year repeat the exam. Of the 9.5 million CEE examinees in 2006, more than 2.83 million (30 percent) were repeat test-takers.

Consequences of Intense College Entrance Examination Preparation

Because of the intensity of test preparation in the student population, there is an incredible demand for practice test items, including those created by teachers, test-preparation specialists, and companies (XinhuaNet, 2005), as well as items that have appeared on previous CEE tests. All CEE test items are disclosed and posted on the Web shortly after administration. This unconditional disclosure makes it impossible to conduct item pretesting and test-equating through common anchor items, a standard psychometric practice in the United States. How are the difficulty levels and other psychometric properties of China's CEE tests controlled without the possibility of item pretesting? Based on this author's personal communication with a number of Chinese testing officials and experts, difficulty levels and

psychometric decisions are mostly subjective and experiential with limited piloting.

A common CEE test development practice in China consists of five activities: (1) forming a test development committee including an appropriate number of content experts; (2) surveying and analyzing all previous CEE test items; (3) writing a set of unique test items that meet curricular guidelines and test specifications and do not bear a close resemblance to previous CEE test items; (4) piloting the new questions with a few select high school students (mostly of high ability because the main objective of China's CEE is to discriminate examinees of high ability); and (5) revising and assembling the final version(s) after collective review. Due to the impossibility of serious pretesting and test-equating, it is inevitable for the means and distributions of CEE scores to fluctuate (China Youth on Line, 2006b), sometimes substantially, both nationally and regionally, even though efforts have been made to target CEE difficulty levels between 0.55 and 0.65 in terms of the common p values, according to Director General Dai of the National Educational Examination Authority (NEEA) (Beijing Daily, 2006). With the decentralization movement of China's CEE, various issues regarding score comparability, validity, and interpretation among provinces and regions of China (which are authorized to develop their own provincial CEE tests) will become increasingly problematic.

Test Security Measures of China's College Entrance Examination

Given the high-stakes nature of the CEE, test security is paramount to the Chinese government at all levels. Because all information related to CEE tests and items is considered a national secret, test security is closely monitored, and violations are investigated and prosecuted swiftly and forcefully by China's Ministries of Education, Public Security, Communication, and Justice (China Education and Research Network, 2006b and 2006c). It is a common practice for all personnel involved in CEE test development to be sequestered from the beginning of the test development process until the CEE is administered. Stealing or revealing any information prematurely is punishable by two to four years of imprisonment plus hefty fines (China Education and Research Network, 2006d). Test materials are often transported and guarded by police and/or

specially designated government officials (CSOnline.com, 2005). Strict security measures are in place to prevent midprocess tampering. Examples of the secure handling of sensitive test materials include answer sheet scanning by police cadets; electronic imaging of all constructive responses without student identification for scoring; random distributions of electronic images to raters (Wang, 2006); and the complete online disclosure of CEE scores for those who have been admitted to universities and colleges in order to provide maximum admissions transparency and equity in accordance with the Sunshine Project (China Ministry of Education, 2006).

Current College Entrance Examination Structure of China

After several rounds of CEE reforms, especially during the past 10 years, China has adopted what is commonly referred to as the "3 + X" system (China Education on Line, 2001). The "3" stands for the three core subject tests that are required of all college applicants: Chinese language, mathematics, and a foreign language (English for the great majority of examinees). While it is obvious that the Chinese language is a core subject test, the reasons for the latter two reflect the national education goal of modern China: "Education must face the world and it must face the future!" This goal was first endorsed by the late Chinese leader Deng Xiaoping, who was often credited for jump-starting modern education in China and opening China to the West. Ingrained in Chinese education is the philosophy that mathematics is the foundation for all other higher learning, scientific inquiry, and technological achievements, while foreign language is the key to connect with the outside world.

The "X" component of the Chinese CEE, also called a synthesis test, is a combination of subject tests that are grouped for students pursuing either liberal arts or science and technology. The subject tests for the liberal arts are political science, history, and geography, while those for science and technology include physics, chemistry, and biology. The rationale behind such synthesis examinations is that all branches of modern liberal arts, science, and technology infiltrate one another, and the modern CEE should assess examinee ability to synthesize and apply diverse knowledge. (For a look at the 2006 Beijing science-track synthesis examination, refer to NetEase, 2006.)

Recent Decentralization of the College Entrance Examination of China

Because China has always had strong national curriculum and guidelines for its primary and secondary education, China's CEE has been highly centralized for the most part since its reinstatement. Until five years ago, there was one set of national CEE tests developed under the leadership of China's NEEA (a division of China's Ministry of Education) with representation from mainland China's 22 provinces, 4 municipalities, and 5 autonomous regions. The past five years have witnessed large-scale decentralization of the CEE. This year, only 16 provinces and autonomous regions used the NEEA's national uniform set of CEE tests, and the others developed, administered, and scored their own CEE 3+X subject tests independently within their judicial territories while adhering to the national and local curricular guidelines (Personal communication with Dr. Ning Han of the NEEA and Professor Ruoling Zheng of Xiamen University of China, 2006). The rationale for decentralization is to allow the CEE to more directly reflect education and instruction at the regional or provincial level.

Common Approach to Evaluate and Admit Examinees

How do colleges and universities evaluate and select examinees in the absence of comparable scores from different regional CEE tests, which vary substantially in content, format, and score scales? For decades the common way in China to select students has been through a combination of quota and top-down selection approaches. First, through the coordination of China's NEEA, all colleges and universities determine their target number of examinees to be admitted from both within and outside of their home provinces and regions. Universities in China are similar to state universities in the United States in that they admit substantially more students from their own region. Second, on the basis of different score distributions from CEE tests in various provinces and regions, colleges and universities determine different CEE cut scores and select applicants based on those scores. This two-part process is often repeated two or three times starting from high to low cutoffs until target admission quotas are satisfied (Sina.com,

2006b). In addition, universities and colleges also admit small numbers of students with outstanding national achievements in science, technology, liberal arts, and sports with or without the CEE process.

Discussion

With rapid and vast economic, scientific, and technological progress under the increasingly more democratic leadership of the Chinese government comes unprecedented freedom of speech in both print and digital media. Never before has there been so much public scrutiny and debate about the efficacy, validity, and fairness of today's college entrance examination system in China. As a result, both the national and provincial educational examination authorities have been actively engaged in experimenting with testing reforms and technical innovations as well as learning about psychometrics from abroad. For example, in June 2006 the author witnessed the use of a computer scanning system that separates an examinee's identification information on the answer sheets from the examinee's answers to constructive response items, and then randomly distributes the examinee's answers to raters for scoring via secure Internet. Such a system drastically reduces the possibility of test security breaches.

In spite of a flurry of new CEE developments, one clear deficiency of China's CEE system is the paucity of technical reports regarding the reliability, validity, and even basic psychometric properties of CEE tests by both the NEEA and the provincial educational testing organizations that develop and administer their own CEE tests. It is the author's hope that Chinese officials will share the results of further reforms and innovations so that the rest of the world can both learn and benefit from its experience.

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The author wishes to thank Director Zhang Jin of the National Educational Examination Authority (NEEA) of China for his recommendation to observe the 2006 college entrance examination of China, and Dr. Ning Han of NEEA for his valuable review.

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