



# A Comparative Study on China-U.S.' APTHS (Academic Proficiency Test for High Schools): Past, Present and Future\*

Xin Li

Xiamen University, Xiamen, China

Wenfan Yan

University of Massachusetts-Boston, USA

This study followed the comparative research mode of description, interpretation, juxtaposition and comparison. Based on the literatures and data collected on the topic, the paper compared and analyzed the past, present and future of APTHS (academic proficiency test for high schools) in the two countries. Some contemplations on the common issues faced by many countries were also discussed. Compared with U.S., the status quo of the exam in China is more problematic resulting from its low professionalization on test assessment and measurement, and bureaucracy on the exam administration. For both countries, equity is the utmost concern in the future development and reform of the exam.

*Keywords:* China-U.S. comparative study, APTHS (academic proficiency test for high schools), student assessment

## Introduction

Today, more than ever the competition between countries relies on the talent pool of each country. So as to gain or retain the upper-handed position in the emerging of the new economic pattern, worldwide educational reforms have been and are being conducted. The reform on high school has attracted the most attention, as high schools play a very important role in each country's educational system. Secondary education can help a country strengthen its education foundation and then make it possible for the country to enjoy an everlasting talent pool and sustainable development. Students in senior high schools are faced with different choices. Some will start their jobs after graduation, while the others will go to the colleges to continue their study. Thus, senior high schools are faced with dual functions and responsibilities. On the one hand, it must live up to the expectation of the labor market by making the high school graduates qualified on both their knowledge and skills. On the other hand, it has to live up to the expectation of the post-secondary educational institutes by supplying qualified influx of new students. What's more, it has to be responsible for their students by providing high-quality education. Senior high schools have to provide them with adequate knowledge and skills needed for labor market or higher education. To sum it up, high school education can definitely influence the human resources foundation of each nation. An efficient academic proficiency exam system can be an important guarantee for the quality of high school education. So far, most developed countries have already established such an exam system. Owing to the most cutting-edge theories and technologies in educational assessment and

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Xin Li, Ph.D., postdoctoral research fellow, Institute of Education, Xiamen University.

Wenfan Yan, Ph.D., professor and chair in Department of Leadership in Education, College of Education and Human Development, University of Massachusetts-Boston.

measurement field, the academic proficiency exam system for U.S. senior high schools has become the world leading example. China is now experiencing the eighth curriculum reform since 1949, which aims at setting up a new curriculum structure and assessment system in order to fit in the whole quality education scenario. Above all, the reform on admission system of the higher education institutions also calls for the reference of a student's high school academic achievement. Thus, the academic proficiency exam system for Chinese senior high schools emerged to cater for all these needs. At this point, China and U.S. come to a common area. The comparative study between the two countries' exam systems will surely help each country identify its problems and take some preventive measures.

### **The Theoretical Framework**

Among the three parts, the first part is about the past of the exam in each country. From the historical perspective, the paper described and compared the emerging background and development history of each exam system. By doing this, the paper was trying to figure out the question of "Where did it come from". The second part studied the status quo of APTHS (academic proficiency test for high schools) with a focus on some import issues, such as its function, content area and administration. This part was aimed to answer the question of "What kind of test it is?", "What is tested in the test?" and "How to organize the test?". In the third part, the features and the problems of each county's APTHS were summarized, and the future developments were anticipated. This part was trying to answer the question of "where to go". By making such comparison, the vertical study of the two systems' past, present and future was formed. The horizontal study of each stage was conducted in each individual perspective.

### **Research Methods and Data Sources**

The research applied a comparative method in the whole study process. The four steps, namely, description, interpretation, juxtaposition and comparison, are conducted accordingly with a clear purpose in each step. In the first two steps, the research data of the country were described individually and then the data were further interpreted. In the last two steps, data from each country were compared and simultaneous analysis was conducted based on the comparison.

As for the data collected in China, the research reviewed the related literature and government policies released from 1983 when the exam policy was first put forward by the former Ministry of Education of China. The research focused on the policies released from 2005 to 2011, since this is the period when the new Academic Proficiency Exam was carried out all through the country. Among all the officially published 34 administrative regions in China, Hong Kong, Macao and Taiwan are not included in the research, since the political and educational systems in those three regions are different from the mainland China. Hubei and Chongqing are not included in the statistic review of the research, because no released policy about new APTHS was found in those two regions when the research was conducted. The statistic review also did not include Gansu, Qinghai and Inner Mongolia, since they have just signaled that they planned to implement APTHS in 2011, but no official policies were released so far. Tibet was not included, because it has just started its curriculum reform in senior high schools in 2010, and no intention of taking APTHS was found so far. The related APTHS literature and data of the other 25 regions were screened and reviewed.

For data and literature review on U.S.'s part, the research covered a time span from the mid-1970s to nowadays with a focus on recent two decades. Even though the states in U.S. have a long tradition of taking

such academic proficiency exam, it is in recent years that more and more states require their senior high schools to pass the exam to get a high school diploma. So the research focus was put on policies and data released in recent years. The statistic review included the 26 states which take APTHS as high school exit exam, since the APTHS in China is also one of the graduation requirements. The other states might also implement the exam, but do not require students to pass the exam to get a diploma, so those states were not included in the research.

### The Research Findings

#### Emergence and Development of APTHS in China and U.S.: A Look Back

The implementation of APTHS in China is quite a result of the curriculum reform in senior high schools. The reform was aimed to revitalize the teaching ideology and reconstruct the curriculum model in senior high schools in the whole scenario of Quality Education Reform. This reform has lasted a decade and has become the most comprehensive and important education reform in China, since the Reform and Open-Up Policy was released in 1978. APTHS could be considered as a result of the reform. In senior high schools, a three-leveled Curriculum Management System (national-local-school) was set up. The curriculum and teaching methods have been changed greatly, so the education assessment and evaluation system have to be reformed accordingly. On the other hand, the College Entrance Exam in China is also going through reforms. Universities and colleges are trying to reform their admission system. Students' performance on the College Entrance Exam should not be considered as the only criteria to decide whether one is qualified to get admitted into a college. Students' performance in senior high schools should also be considered, when making admission decisions. The emergence background can be generally embodied in the Figure 1.

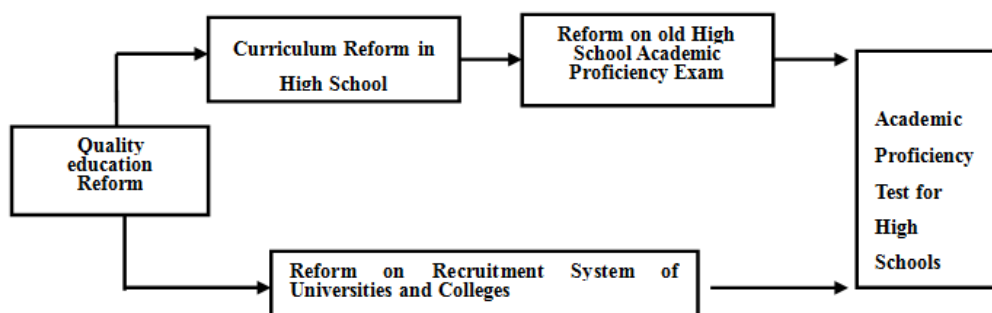


Figure 1. The emergence of APTHS in China.

When China is going through educational reform in schools at different levels, U.S. is also struggling with education reform. Tracking back in 1980's, American people had formed a wide concern that their country would fall behind other countries, if their next generation were well educated. As was described in *A Nation at Risk: The Imperative for Educational Reform* issued in 1983, "A general concern that U.S. educational system was falling short of the implicit goal of keeping American students better than students in the rest of the world" (National Commission on Excellence in Education, 1983). The reform did not work well. In 1990s, American students fell behind their foreign counterparts in several international academic contests, especially on subjects of math and science. People complained that the quality of the public education was receiving and the achievement gap got widening. At the turn of the century, the competition between countries got more intense, public were concerned that American students lacked the knowledge and skills to keep the country's economy afloat and competitive. To cope with these crises, the country gradually picked up the standards-based education reform in late 1990s under George H. W. Bush Administration. The standards-based vision was then

carried forwards by the Clinton Administration and was intensified by the Bush Administration in 2001 with the passing of NCLB (*No Child Left Behind Act*). NCLB increased the accountability that is required of schools and teachers. To live up to the standards required in NCLB has become a predominant issue facing public schools. Students' performances are measured by large scale high stakes standardized tests. The test results are closely interrelated with incentives and rewards for educators in the accountability systems (Li, 2010). American high schools have long been troubled with dropout problem which has become a substantial drag on the nation's economic competitiveness. "Annually, dropouts cost U.S. more than \$300 billion in lost wages and increased public-sector expenses" (Alliance for Excellent Education, 2008). To improve the academic performance of high school students, many states passed legislation to require students to pass the test to graduate with a diploma. This kind of test is generally called high school exit exams which aim to hold schools, teachers and students accountable for their teaching and learning. The number of states implementing such tests is on the rise during the past decade. The emergence background can be shown in Figure 2.

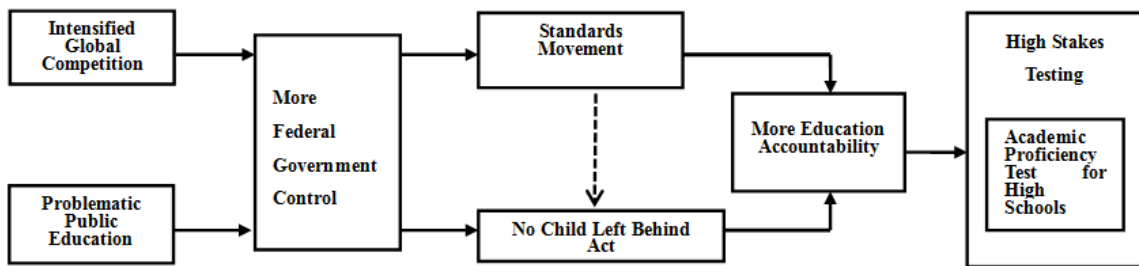


Figure 2. The emergence of APTS in U.S..

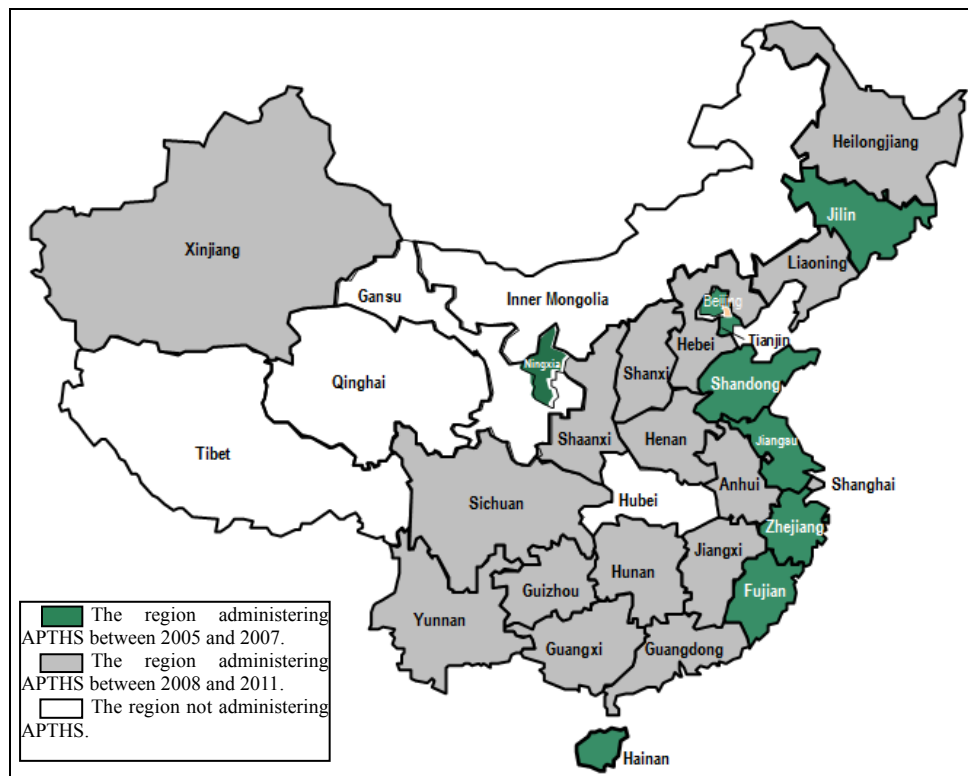


Figure 3. The development map of APTS in China.

The development of APTHS in China is prevailing since its debut in 2005 when the high school students took the test in Shandong Province. In the following six years, most of the regions in China have taken the test. As is shown in Figure 3, the number of the regions administering APTHS is steadily on the rise since 2005. The quick development started in 2007 after Guangdong, Shandong, Ningxia and Hainan have piloted the exam in 2005. Up to 2011 among all the 31 regions in mainland China, 25 regions have started the exam. The rest six regions will soon take up the exam in the near future.

Due to economic and political reasons, phasing in APTHS in the states of U.S. has been a bumpy road. When some states start administering the exam, some other states might terminate it. According to the data given by Center on Education Policy, so far 25 states are officially administering the exam.

As is shown in Figure 4, after NCLB took effects in 2002, more and more states started the exam. Most of the states phased in the exam from 2003 to 2010. In the year of 2003 alone, six states started the exam. The development of APTHS can be shown in Figure 4.

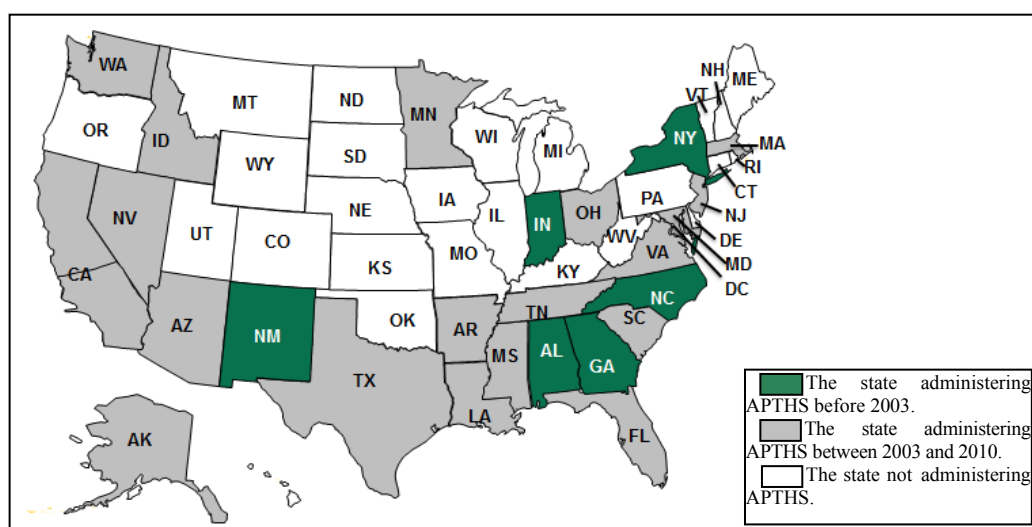


Figure 4. The development map of APTHS in U.S.. Source: Center on Education Policy, exit exam survey of state departments of education, August 2009.

By comparison, the research found that both exam systems were promoted by each country's political and economic environment, which embodied education's political and economic function. The one in China was directly propelled by the Quality Education Reform, but the ultimate reason was the urge to cultivate creative talents for the nation in the Knowledge Economic Age. In China, the exam is also intrigued with the reform on College Recruiting System and College Entrance Exam. The one in U.S. was more influenced by political reasons at its first appearance. From the 1970's Minimum Competence Test to the present Comprehensive Exam and the End-of-Course Exam, the escalation of difficulty level and the expansion of test content area mostly answered the calls of the nation's political and economic needs. In U.S., the exam is also expected to boost the value of a high school diploma and hold high schools accountable for student achievement.

### The Function, Contents and Administration of APTHS in China and U.S.: A Look Inside

**Nature and function.** The way how people view the nature and the function of APTHS in China and U.S. are almost the same (see Table 1). They are both criterion-referenced summative high-stakes testing. The slight differences also exist. Only 1/3 of the regions in China clearly stated it as a regional level exam. Another 1/3

viewed it wrongly as a national exam. While in U.S., there is a unanimous acknowledgement that the exam is just local level. Another difference lies in that the criterion used in China is the national curriculum standards established for each individual subject. Since in U.S., the tradition in education is “federal concern, state function and local control”, the subject teaching standards are basically state-wide and the criterion is based on state standards. So as to the stakes attached to the exam, in China, the test is more like a student’s individual affair, since a vast majority of students can pass the exam, if they work hard enough. Teachers’ performances are usually judged upon the test results on College Entrance Exam. While the stakes of APTHS in U.S. are deeply involved with teachers, schools and students, since the graduation rate in the whole country is relatively low and all the stake-holders are held responsible in the accountability system.

Table 1

*The Nature of APTHS of China and U.S.*

	National exam	High-stakes testing	Criterion-referenced exam	Summative evaluation
China	×/√	√	√	√
U.S.	×	√	√	√

The functions of APTHS perform in the two countries share more similarities than differences. They help the provincial and state governments guide the development trend of high school education by implementing the test over certain subject areas, to oversight the local education administrative departments, and to make sure the provincial/state-level curriculum standards are closely followed by different high schools. The APTHS also help students better understand how well they live up to the curriculum standards. The APTHS in China also performs certain selective functions. Students’ performance on the test is generally divided into four levels of grades A, B, C or D based on the rubrics of each subject test. Their grades will determine whether they are qualified to apply for first class universities or even been accepted by their desired universities or colleges. So, for Chinese high school students, the matter is not whether they can pass APTHS. What really matters is how many “A”s they can get. While for American high school students, the only thing matters is whether they can pass APTHS.

**The content areas.** The content areas tested in APTHS in China and U.S. are similar after the education reform in China. Since the eighth curriculum reform in China was carried out, the curriculum structure was reshaped. The new curriculum structure was composed of three levels, namely, study areas, subjects and modules. The eight study areas include language and literature, mathematics, humanities and social science, science, technology, art, physical education and health, and comprehensive practical activities. The APTHS in China covers all the subjects under these eight study areas. Since the three areas of art, physical education and practical activities are all left with each high school or district to judge, the bar is not high and students can pass easily. The tests on the other five areas are all administered by provincial government, so they are much more strict and competitive. This is especially true when the test results of the subjects tests under those five areas are used for college application.

The content areas tested in APTHS of U.S. are almost same in every state. Even though there is a slight difference over the subjects tested in each state, all the subjects can be generally classified into five areas: English language arts, mathematics, science, social science and technology/engineering.

The five content areas and the subjects of APTHS in China and U.S. are quite similar, which may also represent the general development trend of the international curriculum structure. It may also expose China’s

eagerness to learn the advanced education experience from Western countries. Also, as is shown in Table 2, English is tested in China's APTHS. Actually, English has become one of the most important subjects in China at every level of the education. Its importance can never be overestimated. What's more, besides paper-and-pencil tests, students are all required to take operational assessments for subjects, such as physics, chemistry, etc.. Generally speaking, the content areas on U.S.'s part are comparatively traditional and consistent. The basic three "R"s are still the core subjects in its elementary and secondary education, so the test content of APTHS in U.S. has a tendency to be more comprehensive, but is still dominated by core subjects like reading, writing and mathematics.

Table 2  
*The Content Areas of APTHS in China and U.S.*

China		The U.S.	
Content areas	Subjects	Content areas	Subjects
Language and literature	Chinese, English	English language arts	Reading and writing
Mathematics	Mathematics	Mathematics	Algebra and geometry
Science	Physics, biology, chemistry and geography	Science	Physics, biology and chemistry
Humanities and social science	History, politics and geography	Social science	History, geography, civics and economics, etc.
Technology	Information technology and general technology	Technology/engineering	Computer science

As for the number of subject tests in APTHS, students in China have to take all the 11 subjects listed in Table 2. For subjects like physics and chemistry, except paper-and-pencil test, there will also be an operational test to judge students' performance over certain physics or chemistry experiments. The things in U.S. are different from state to state. Depends on the type of the APTHS, the number of subjects tests U.S. students' need to take varies from two to nine. For Florida, only subject tests on reading and mathematics are administered. For Virginia, the number of subjects tests amounts to nine, since the state is now using end-of-course exam. Because the test type is undergoing transformation from Comprehensive Exam to End-of-Course Exam, it could be expected that states will include more subject tests in APTHS. What's more, almost all the APTHS tests in U.S. do not require any operational or performance assessments for subjects like physics and chemistry, etc..

**The administration.** The administration of APTHS in China and U.S. are largely determined by each country's educational system. In U.S., the local government has high authority over the local education affairs. Whether to implement the exam or how to organize the exam are left to state governments or even the local school districts to decide. As APTHS is a statewide exam, its administration has two levels. The administration structure of APTHS in Florida was given to illustrate the point (see Figure 5).

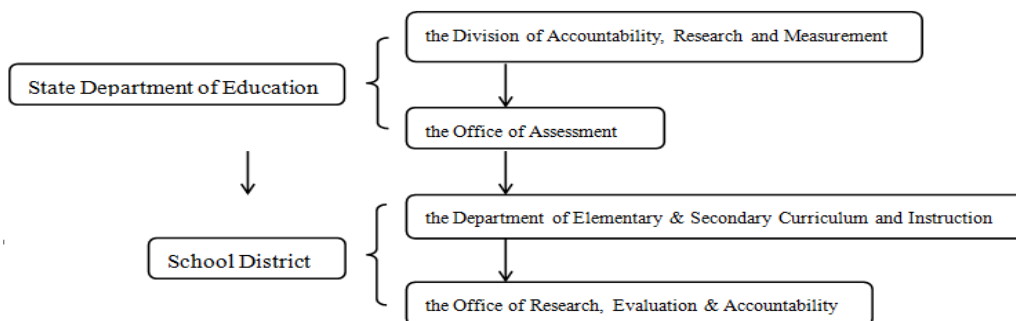


Figure 5. The administration structure of APTHS in Florida.

The two-leveled administration structure of APTHS is a dominant hierarchy in U.S., even though the exact names of the departments and offices vary in each state. As U.S. has a long tradition and rich experience in education measurement, State Department of Education will usually has a division responsible for accountability and assessment. The state government will cooperate with professional test companies like Pearson and ETS (educational testing service) to develop test paper to cater for the specific purpose of APTHS. The related regulations and rules are established in the law. The test is almost free in every state and the rights of students are sincerely respected. The government education departments at all levels serve the students and teachers in an active way. The alternate exam policies for students with disabilities and language difficulties reflect the nation's humanitarianism and the spirit of all-inclusive education.

The administrative system of the exam in China is mostly a three-leveled hierarchy which is composed of provincial, municipal and district-based departments and bureaus. Figure 6 shows the administrative structure of APTHS in Jiangxi Province which is typical of its kind in China.

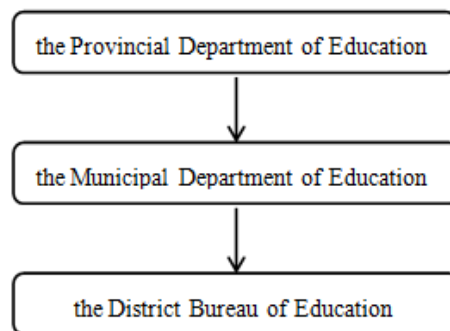


Figure 6. The administration structure of APTHS in Jiangxi Province.

In some regions, government also put the high schools into the hierarchy to increase their sense of responsibility. Thus, a four-level structure will be formed. Compared with the two-level hierarchy in U.S., those administrative structures in China are not efficient enough. What's more, even the two countries' APTHS administration are mostly directed by the provincial/state government, they have distinctive features. As a highly centralized country, the central government and the Ministry of Education make decisions over important educational affairs across the whole country. This is also the case in APTHS. The provincial and municipal governments only need to implement the educational decisions. To implement the exam is a nationwide political order.

### **The Concerns and Implications: A Look Forward**

Over the years, APTHS has imposed profound influences on both countries' education. Since its implementation in China from 2005, APTHS has brought in certain beneficial influence. It reinforced the new curriculum reform in high schools, boosted the admission reform on higher education institutions and propelled China's international collaboration with other countries on student exchange affairs. In U.S., the test has helped to urge students, teachers and high schools to assume responsibilities to improve themselves, fine-tuned the curriculum alignment with each statewide standards, and identified strengths, weakness and gaps in curriculum and instruction.

Above all the positive influences, APTHS has also aroused certain concerns in the two countries. In China, the problems may include that: Different places need to reach an unanimous recognition of the test's nature;



The administration of the test needs to be improved; Test development process and scoring process need to be more professional; and The test result needs to be applicable nationwide and be used reasonably in the college admission process. In the future, the government might need to work mainly on three aspects to solve the problems. First is to revitalize its management ideology. Second is to promote the development of professional assessment and measurement, and to introduce educational service companies. Third is to optimize and simplify various senior high school assessment systems. In U.S., the common issues in different states are the high expenditure of the test, the overuse of the test result, the deficiency in the equality, the overestimation of economic value of the test and deformation of the function of senior high school education. To tackle with these issues, the federal government and states might need to make efforts on the following aspects: to guarantee each student with equal education opportunities; to optimize the present APTHS system by unifying the test standards of different states and expanding the test content; and to set up a comprehensive assessment system for senior high school education by introducing alternative assessments and by assessing students' high-order thinking skills.

### Conclusions

Based on all the comparisons between two countries, certain common issues faced by both countries can be generalized. The first issue is about the centralized and decentralized education administrative systems. As is known to all, China is a highly centralized country. Over years of reform on education, the central government has given the local governments more freedom to make their own educational decisions. As for academic performance test in high schools, it used to be held all around China a decade ago. Later on, the central government left it with local governments to decide whether to hold the exam. Then, some provinces quit the test. Some provinces let each city hold the test all by itself. In a few years, problems were found in many provinces that the quality of high school education was not guaranteed or even in a recession. This became one of the factors that the Ministry of Education required all the provinces to hold APTHS and even connected the test with College Entrance Exam to emphasize its importance. On the other hand, U.S. used to be a highly decentralized country with each state sharing sovereignty over its educational affairs. But over the years, the federal government has exercising more and more control over the local governments by means of law or financial support. Each education administrative system has its pros and cons. The dilemma was how to maintain the power balance between the central government and local governments.

The possible backwash effects brought by the standards-based education reform are another important issue. The standards-based Reform in 1990s has deeply influenced the education of U.S. and even the whole world. The textbooks, tests, teacher training and instruction should all be aligned with the curriculum standards. The reform has brought about many positive effects, but the side-effects of standards have also become a big concern for many educators. It is reported that in U.S., the one-for-all nature of standards-based tests has deprived students of their individuality and creativity. The standards-based education reform in China has just taken on in recent year. Educators in both U.S. and China are confronted with questions of how to avoid the bad effects of standards-based tests.

The third issue is how to maintain equity in the test. In standards-based test like APHTS, all students are measured by the same standards, so the test itself should be fair to all. That means all the students should have the same right to learn the contents area. First, they should be given the equal right to learn. Second, they should have equal right to get access to good educational resources which include qualified teachers, ample

learning materials and nice facilities. If they were not treated fairly in those two aspects, it would be unfair to judge them based on the same standards. This is especially important in high-stakes testing like APTHS. Concerns over test equity have aroused attention in both U.S. and China.

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