

# A Comparative Study of Compulsory Education Quality Assessment System between China and the United States

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**ABSTRACT.** *Establishing a complete compulsory education quality assessment system has become an important measure of improving the quality of education around the world. This study conducts a comparative analysis of Compulsory Education Quality Assessment System between China and the United States. This article analyzes three aspects in detail, such as the subject and object of the assessment, the content and method of the assessment, and the feedback of the assessment results. It finds the similarities and differences between the two systems and tries to explore the international model of compulsory education quality assessment system.*

**KEYWORDS:** *China; The United States; Compulsory education; Quality assessment, comparative study*

## 1. Introduction

In recent years, more and more countries and regions in the world pay more and more attention to the issue of national education quality assessment. In July 2018, the Ministry of Education(MOE) of the People's Republic of China released the first China Compulsory Education Quality Assessment Report.

The education quality assessment has been carried out earlier in United States of America, and a relatively complete assessment system has been established, which has a certain history. Since the systematic assessment of the quality of preschool education has not been involved in two countries at present, this paper chooses the assessment system of compulsory education quality of both countries as the research object. It mainly studies the assessment of the quality of compulsory education at the national level. Because of the late establishment of the quality assessment system of basic education in China, there are few comparative studies about this topic. In spite of those, the construction of compulsory education quality assessment system is of great significance to the improvement of education quality all over the world. What's more, with the change of the times and the development of science and technology, there has been a great change in the means of education quality

assessment. On the basis of the existing research, I mainly use the method of policy analysis and comparative approach to make a comparison between China and the United States on compulsory education quality assessment system. This article finds the similarities and differences between the two countries' assessment system, and attempts to probe into the international mode of compulsory education assessment system from five angles.

## **2. The Subject and Object of the Assessment**

At first, it will explain two questions: Who organizes the assessment and who will be assessed? On the whole, the national quality assessment of compulsory education between China and the United States is led by the ministries of education (it calls U.S. Department of Education in America) of the two countries. However, there are some differences in the process of carrying out the assessment.

### ***2.1 China: National Assessment center for Education Quality, MOE***

The quality assessment of compulsory education in China is organized and implemented by the National Assessment center for Education Quality (NAEQ), which is under the direct leadership of the Supervision Bureau of the Ministry of Education. The Education Supervision Committee Office of the State Council is responsible for overall planning and policy guidance, the provincial education supervision department organize testing and supervise the process, and the education supervision departments at the prefecture and municipal levels assume the corresponding responsibilities. The county-level education supervision department organize on-the-spot testing, and the sample schools does the testing work in accordance with specifications and regulations of the assessment procedure. NAEQ has set up an open platform to integrate resources and forces in relevant fields. Education supervision and evaluation agencies across the country actively establish cooperative relations with the center by signing agreements.

### ***2.2 United States: National Center for Education Statistics, IES***

The National Assessment of Educational Progress (NAEP) is the only nationally representative educational assessment that measures what U.S. students know and can do in various subjects across the nation, states, and in some urban districts. National Assessment Governing Board (NAGB) is an independent organization of educators, community leaders and assessment experts, and it is responsible for formulating policies for NAEP. The National Education Statistics Center (NCES) is responsible for the operation of NAEP. It is a division of the Institute of Educational Science (IES) within the U.S. Department of Education. NCES selects third-party organizations for specific implementation through competitive bidding, such as Educational Testing Service (ETS), an organization that has developed content, analyzed data and reported results for NAEP on behalf of NCES since 1983. The

NCES Assessment Division has contracts with several organizations and individual states/jurisdictions to carry out the NAEP assessments.

### ***2.3 The Object of the Assessment***

In the face of the huge number of students in the compulsory education stage, both countries select objects for assessment by sampling. Both countries have selected students in the fourth and eighth grades as samples. The United States also selects students in the 12th grade as the objects. In terms of the selection of assessment objects, NAEP of the United States is divided into three categories. The first category is the national assessment. Students in the three grades of 4, 8, and 12 are selected as the national assessment targets, but these three grades are not tested every year. The next category is state or trial urban district assessment(TUDA). Third, 9-year-old, 13-year-old and 17-year-old students were selected for the long-term trend assessment, which was conducted every four years. Besides, NAEP also has a number of auxiliary thematic studies that target specific groups of students. In addition, China and the United of States also regard school educators, families and other factors as parts of the assessment objects, but not the main parts.

## **3. The Content and Method of the Assessment**

It will explain about what to assess and how to assess these two issues in this part. Despite the wide scope of the assessment, it needs to be made clear that students' academic achievements and performance are the main content of the assessment, and from that comes the questions of the specific subjects in assessment.

### ***3.1 The Disciplines of Assessment***

Because of the different curriculum system, the specific subjects of assessment are different between two countries. China mainly carries out periodic assessment of six disciplines, the first year measuring Mathematics and Sports, the second year measuring Chinese and arts, the third year measuring Science and Moral Education, and completing one cycle of assessment every three years. There are 10 national assessment subjects in the United States, mathematics, reading, science, writing, technology and engineering literacy, arts, civics, geography, economics, and U.S. history. The national assessment activities are carried out every year according to the NAEP assessment schedule. Long-term trend assessments are conducted every four years in mathematics, science, reading and writing. Besides, there are auxiliary thematic studies in NAEP, such as oral reading studies.

### ***3.2 The Specific Content of Assessment***

The specific content of the test mainly includes student academic tests and related questionnaires. The assessment in China is based on compulsory education curriculum standard to design the test questions to examine the students' knowledge and ability. The design of the test questions in United States is based to some extent on the Common Core State Standards. But the specific test content should follow the guidance and recommendations of the committee of NAEP. NAEP test questions require expert review, pilot test, field test and other procedures.

### ***3.3 The Method of Selecting Samples***

In selecting samples, China has developed a national compulsory education quality assessment online platform, taking a stratified unequal probability sampling method. The district- school- student three-stage sampling method is conducive to comparing among regions. The United States uses the sampling frame to select representative samples, which was created based on the Common Core of Data (CCD) and the Private School Survey (PSS). The sample students come from a national sample of public and private schools, in which each school and every student had a known probability of being selected. Both countries have requirements for participation rates, which are assessed or reported only when the minimum participation rate is reached.

### ***3.4 The Tools of the Assessment***

At present, China still mainly uses traditional paper-and-pencil academic test papers and questionnaires, as well as digital measurement tools such as sports field testing equipment and electronic music singing system. NCES is working to shift NAEP from paper-pencil to digital-based assessment. Since 2017, American students have been assessing math, reading and writing on tablets provided by NAEP, and other disciplines have been experimenting with digital format systems for the recent two years. With the computer and digital tools playing a more and more important role in today's education, the appropriate use of information technology in assessment can solve the problems of data acquisition, evaluation and analysis in large-scale testing.

## **4. The Feedback of the Assessment Results**

The assessment department will sort out the results of the assessment and analyze the data, and finally generate the assessment results. So how are the results of assessment fed back and applied? What is the way these results are presented? How does it affect the improvement of the quality of education? There are great differences between China and the United States.

In China, NAEQ has written a series of different results reports based on measured data and submitted them to the relevant departments of the education. The center issues a national report every three years, which is publicly available on the website of the Ministry of Education of China. According to the first report published in 2018, the content of the report mainly includes the basic situation and main results of the compulsory education quality assessment, and the recommendations for improving the quality of compulsory education. Students' academic performance is divided into to these four levels: be improved, medium, good and excellent. At the same time, the center will provide assessment results reports to all participating provinces and sample districts each year, and organize interpretation sessions on assessment results reports to help people understand the results of the measuring data, which are conducive to better promoting the application of assessment results. The assessment center will also provide professional support for the improvement based on assessment results in some districts and counties.

The National Assessment of Education Progress in the United States is also known as the Nation's Report Card. Results for NAEP assessments are reported in The Nation's Report Card. The purpose of the nation's report card is to report the performance of primary and secondary school students in the country. NAEP has two ways to present the assessment results of students' performance, which are the scale score and the achievement level. Average scale score shows the student group level and can be used for comparisons among states, regions, and student groups. The achievement level is defined by the internationally common methods and procedures, divided into three levels: basic, proficient, and advanced. Results are reported as percentages of students performing at or above three achievement levels. The results of the assessment will be classified according to the year, subject and grade, and will be published on the website of National Report Card. The results are published on the National Report Card website by year, subject and grade, and are reanalyzed by the NCES, where anyone can view the latest NAEP results. The evaluation results provide an empirical basis for policy makers, school administrators and teachers to take measures to improve education management and teaching.

## **5. The Forecast of International Mode**

Through the above comparative analysis of the quality assessment system of compulsory education between China and the United States, it is not difficult to find out what is common in it. Base on those, I attempt to summarize and analyze the international model of national compulsory education quality assessment. This part is summarized from the five aspects mentioned above to discuss the future development trend of compulsory education quality evaluation.

### ***5.1 Subject: Specialized education quality assessment institution***

Both countries are organized and evaluated by specialized assessment institutions of compulsory education quality. There is NAEQ in China and NAEP in the United States. Specialized educational quality assessment institutions are often able to make the assessment more efficient, independent and professional in the work, and obtain more accurate and objective assessment results.

### ***5.2 Object: As much as possible to assess more ages***

In general, the critical period of student growth is selected for assessment, such as the fourth-grade eighth-grade students. With the development of information technology, the selection range of assessment objects has gradually expanded, which means that the scope and quantity of assessment objects are expanded. It will reduce the error of the assessment results and make the results more comprehensive and more representative.

### ***5.3 Content: Focusing on the knowledge, ability and morality of students***

The quality of compulsory education is the result of a combination of many factors, but it is mainly reflected in the academic achievements of students. The assessment generally selects subjects which are of great significance to students, such as mathematics and art, but it is not limited to assessing students' mastery of knowledge, but also includes students' learning ability, aesthetic ability, moral quality, and so on.

### ***5.4 Method: The digitalization of assessment methods***

Artificial intelligence system has been applied to the quality assessment of compulsory education in China, and the United States is also fully transitioning from paper-pencil test to digital-based assessment. Assessment institutions use innovative technology to explore new testing tools continuously, and the assessment methods are becoming more and more digital.

### ***5.5 Results: Rational application of the assessment reports***

The transparency of the assessment results makes it easier for policy makers, school educators, and educational researchers to obtain information. The comprehensive, objective and accurate assessment results can help the reform of compulsory education to find out the correct direction, facilitate school educators to understand the current situation of teaching quality, and better improve education and teaching.

## 6. Conclusion

In short, the quality assessment of compulsory education in China is organized and implemented by the NAEQ of the Ministry of Education. The assessment is carried out according to the national curriculum standards and relevant education policies. The analysis of test data and questionnaire finally make up for the quality report of national compulsory education. Interpretation meeting is a primary approach to promoting the use of evaluation results. NAEP in the United States is led by the NAGB, but implemented by the NCES and carried out by third-party organizations through competitive bidding. The assessment reports are diversified, including revelation of different situations. It can be seen that it is an efficient choice to set up a specialized education quality assessment institution. And assessing as many students as possible can make the results more accurate. The content of assessment is more and more focused on the investigation of students' performance on many aspects, not only on academic achievement. The progress of technology makes the method of assessment more digital. Paying much attention to the rational application of the assessment report can better promote the application of the assessment report. Through the comparison of the quality assessment system of compulsory education between China and the United States, I hope that it will be helpful or enlightening for all countries in the world to construct and perfect the quality assessment system of compulsory education in their own countries.

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