

# Introduction to the Project of Students' Academic Achievement Assessment and Improvement in Middle and Primary Schools

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## 1. Background of the project

Students' academic achievement is the most important harvest of the education, which is the vital standard to evaluate a nation's education, and it directly relates to students' future life and the quality of the whole country.

In 2001, curriculum reform, with the core to improve students' integrated competences, was carried out by the government in China. And one of the vital objectives is to improve students' academic achievement.

At present, curriculum reform has been thoroughly carried out within the period of compulsory education. New curriculum has been experimented in senior middle schools in more than 10 provinces.

The curriculum reform advocates that students should not only get scores in tests, but the more important to improve quality and competence, and develop their affect, attitude and value view.

The emphasis of basic education of China is changing from the enlarging amount and perfecting hardware to the improvement of education quality. The evaluation of basic education was dependent upon the ratios of

popularization, dropping out, and reservation. The recognition of education quality was based on the teachers' education degree, equipment, etc. It was scarce of attention for the students' academic quality, and there was no effective evaluation method to scientifically and systematically analyze students' academic achievement.

Therefore, it is necessary to build up the system of Students' Academic Achievement Assessment and Improvement in Middle and Primary Schools with the new curriculum belief. This is the foundation and core in the field of basic education, which is helpful to shape the accurate view of education quality, reflect the advantages and shortcomings of students' study and provide information to improve teaching and education quality.

## 2. Aim and organization

In 2003, National Center of Curriculum and Textbook Development, Ministry of Education of China, launched the project of Students' Academic Achievement Assessment and Improvement in Middle and Primary Schools. The aim of the project is to develop of high-quality assessment instruments, so as to set up the province-level norm of students' academic achievement, analyze the

advantages and weaknesses of teaching and learning, explore the way to improve the quality of teaching and learning based on experimental data.

To be specific, the project is to explore and solve the issues as follows:

To assess the literacy and competence of students in different grades based on the high-quality test instruments and questionnaires.

To know and analyze the main factors influencing teaching and learning.

To present abundant and understandable information in effective form.

To improve educational quality by applying assessment results.

With the bases of Beijing Normal University and Beijing Foreign Studies University, the project is made up of the specialists and professionals on Curriculum and Teaching, Psychology, Educational Assessment, Educational Statistics, Computer Software Programme, etc.

The project is administered by the Project committee, who is responsible for the design of the holistic framework including to definite the work objectives, construct working strategies, arrange the work development, collect finance, personnel recruitment, etc. With the leadership of Project Committee, there are Group of Test Development, Group of Field Operation, Group of Statistical Analysis, and Group of Software Development.

There are several subject groups within the Group of Test Development, and made up of researchers on science,

teachers and researchers on teaching. The leaders of each subject group are university professors, who are well-known specialists and experts in the respective academic field and have abundant experience in the large-scale test development. They are deeply familiar with the new curriculum standard, and some of them are participants or leaders of the curriculum standard development. The task of the group includes test development, scoring and writing reports.

Group of Field Operation is responsible for preparing test materials, connecting with participants, test administration and data collection; Group of Statistical Analysis takes the charge of analyzing the quality of testing items, sampling, data cleaning, analyzing statistics and writing reports; and Group of Software Development is with the software development as the responsibility.

### **3. Working method and content**

During the early period, students in Grade 3 and Grade 8 are the subject to be assessed. Chinese and Math were related to Grade three, while English and Science are two more subjects for Grade eight. With the province as unit, the method of multiple-phrase PPS is employed to randomly sample the participants.

Based on the national curriculum standard, the project focuses on the students' quality and competence with the foundation of basic knowledge and skills through paper-pencil test, especially the ability to solve practical problems, to collect and analyze information, reflection and critical

thinking, and special subjects' competence. The form of testing items is objective and subjective, with the former as the main part. Real situations and tasks are the main form of test items and assessing students' high-order thinking is emphasized.

The test development follows the procedures of specification construction, item submission, review and selection, pilot test, modification, etc. Classical Theoretical Theory (CTT) and Item Response Theory (IRT) are employed to analyze the test items, demarcating the item difficulty, describing the item feature curve, giving item information function and the infit of item and RASCH model. Based on this, the differences of item functions are analyzed. With the methods stated above, the statistics can be furthest to keep the real reflection of students' competence.

Student questionnaire, teacher questionnaire and principal questionnaire are employed to get information of the factors influencing teaching and learning. Student questionnaire includes students' family environment and daily life, interpersonal relationship, school environment, learning interest, motivation, self-efficiency and expectation for the future, learning methods and strategies, and teachers' teaching; teacher questionnaire is made up of the questions of basic information, daily work and load, teacher's view on their career and working environment, profession development, teacher's view on student and education, and teaching methods and strategies; while principal questionnaire includes the questions as follows: basic information, daily work,

principal's view on student and education, work on development of school-based teaching research, and teacher's profession.

#### **4. Project development**

When the project came into existence, basic research related to students' academic achievement was initially carried out. It consisted of actuality analysis, comparative study, and cooperated with the international institution on speciality.

In December, 2004, 2,000 students participated in the test organized in Dalian and Pudong, integrally experienced test development, data collection & analysis, management of field operation, etc.

In September, 2005, pilot test in Beijing, 2000 students were involved. Specific test framework and reliable test instrument were shaped.

In November, 2005, based on sampling, test was carried out in Liaoning, and feedback report was developed.

In December, 2006, new test instrument, test in Shanghai and 106 counties in Jiangsu. So far, more than 100 thousand students participated.

At present, the report of students' academic achievement assessment comprises the contents of general performance of students in each subject, students' performance in specific contents and competence of each subject, comparison of students in different cohorts, students' performance at each testing item, analysis of typical testing items, result of questionnaires and the

relationship with scores.

#### **5. Improvement of the education quality based on the assessment data**

The aim to evaluate the students' academic achievement is to improve the quality of teaching and learning. The project is helpful for specialists and teachers to combine experience and experimental data in order to know the advantages and weaknesses of teaching and learning through scientific method. According to the actual condition of areas, the project will explore the methods and system to improve the quality of education based on the evaluation results.

【講演者プロフィール】

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**Education:**

1983, Graduated from Beijing Normal University

**Experience:**

1986-2005, Engaged in *the research of basic education policies and administration*, in Department of Basic Education, Ministry of China

2005- National Center of Basic Education Curriculum and Textbook Development, Ministry of China

Organize the research of basic education curriculum and textbook development; Involved in the study-out of *National Curriculum Standard* of basic education; Organize the textbook research and development of experimental curriculum of basic education; Organize the textbook experimental work and training work of basic education curriculum; Organize and take charge of the assessment work of basic education curriculum, textbook, teaching methods, and other basic education teaching fields; Take charge of the work of international communication and project cooperation of basic education textbook.

【機関紹介】

**中国教育部基礎教育課程教材発展中心**

**National Center for School Curriculum and Textbook Development、  
Independent Agency affiliated to the Ministry of Education of China(略称:  
NCCT)**

**概要**

教育部基礎教育課程教材発展中心は 1998 年に課程教材発展研究中心を前身として設立。全国規模の調査を行い、学校教育課程の開発と評価、教材や教材関連の業務を行う、唯一の中国教育部から認可されている機関。また中国における学校の評定を行う唯一の機関でもある。

**主な活動内容:**

- 1) 小・中・高校教育の評価の調査実施と各段階での学習効果と課程並びに教科書の評価基準の策定。
- 2) 小・中・高教育における課程、教科書、視聴覚教材の評価。
- 3) 小中学校での教学方法や教育に関わる管理体制の評価。
- 4) 小・中学校の教材認可委員会の事務局として、外国人児童のための学校を評定。