

# A Comparative Study of Normal Students' Cognition of Mathematics Teaching Skills

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**Abstract:** Normal major is the systematic teaching of education personnel training in China, and it is the main talent source of the teacher profession. The teaching and learning achievements of normal students are directly related to the follow-up formal teaching activities. Mathematics, as one of the important subjects in any stage, is also a skill element that students must master in their study and life. We should pay attention to the gap between normal students' understanding of mathematics teaching skills and in-service teachers' knowledge. Based on this, this paper makes a comparative analysis on vocational skills, theoretical knowledge and ability, professional quality and concept, and how to improve and deepen the understanding of normal students' mathematics teaching skills and put forward suggestions, hoping to provide some suggestions and directions for the improvement of normal students' mathematics teaching.

**Keywords:** Normal Students' Mathematics; Teaching Skills Understanding; Comparative Study

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## 1. Comparison of vocational skills

In the actual teaching activities, the professionalization of teaching and the professionalization of teachers themselves have been effectively promoted and developed, for improving the professional skills of teachers. Teachers are not only a lifelong career, but also a profession, which requires teachers to have outstanding professional skills. This is the main point that normal students and in-service teachers agree with. In the mathematics classroom of each grade in our country, most of the teaching activities are carried out in the form of teacher guidance and student-centered, with class as the unit. Teachers carry out teaching activities according to the syllabus according with the teaching plan, guide students to learn and train. The classroom organization is systematized, and the teaching content is framed, which involves less practical mathematical questions in real life. The quality education and core literacy proposed by the new course reform urge teachers to focus on the training of teaching skills. According to the survey results, most of the mathematics teachers agree with the course setting of normal students, but less than half of them can really meet this requirement. It means that the course setting of normal students does not match the current course requirements, which should be improved and perfected.

In order to improve the mathematics teaching skills of normal university students, it is necessary to start from the aspect of educational practice, and normal colleges and universities should take it as the key course of teaching. For a long time, China's normal colleges and universities have been affected by the traditional concept of education, and the focus of the course has been between research-oriented education and teaching-oriented education, too much emphasis on academic education and

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ignoring the importance of normal education, so that the education practice of normal students is far from enough attention. In addition, the application of double qualification teaching mode is insufficient in normal universities in China, and professional teachers are lack of practical teaching experience in primary school, junior high school and high school, so they cannot play a guiding role in educational practice.

As a professional connotation, teaching skills are an important part of teachers' comprehensive quality. Normal students should be an important step for teachers to engage in education. Skill training covers normal students' professional skills and educational practice. However, in the current teaching of normal colleges, the two are not closely related. Therefore, we should improve the assessment methods and methods of professional teachers' skill training in normal colleges. As for the assessment of normal students' skill training, the previous assessment method based on theory should be abandoned, and apply the new forms of organic combination of quantitative and qualitative, written and oral examination, single comprehensive assessment, and theory and practice, so as to achieve the level and progressive mode of training and assessment as well as the goal of improving the comprehensive quality of normal students.

The practicality of course setting is the knowledge and skills that mathematics teachers must possess, and outstanding teaching skills are also the advantages of mathematics teachers' professional competition. The research shows that teachers who have been on the job for a short time pay more attention to teaching skills than those who have been on the job for a long time. Good interpersonal skills play a very important position in teachers' professional skills, which is also one of the improvement directions of practical teaching in normal colleges. Normal students' teaching should be in line with the characteristics of teachers' actual teaching work and meet the requirements of teaching skills development. The course setting of mathematics teaching skills for normal students can be strengthened by micro teaching and other methods. Meanwhile, the communication performance and evaluation performance of skills training should be reflected in the teaching plan. After all, teachers' evaluation and communication ability is a powerful guarantee to guide students' mathematics learning.

## **2. On the comparison of theoretical knowledge and ability**

Normal colleges and universities should reflect the dual characteristics of higher education and practical teaching work in teaching. In addition to ensure the scientificity and rationality of the professional course structure, it is also necessary to carry out the reform of the teaching content and mode of the specialty, emphasize the instructional characteristics of the course, and improve the integrity of the course setting, as well as strengthen the innovation of the course setting, in order to fully improve the comprehensive skills of normal college students with strengthening the skills training, attach importance to educational practice, and integrate the teaching system. All of these points are the improvement direction of the course program in normal universities.

### **2.1 On the theoretical knowledge for mathematics teachers**

Although many people think that what mathematics teachers have learned have no inevitable impact on students' learning, many mathematics teachers think that rich mathematical theory knowledge is the basic premise of mastering the subject teaching. In the actual teaching process, teachers' age, working hours, teaching level, education background and so on will become the influencing factors of mathematics course reform. Teachers with higher education background tend to accept the teaching concept of the new course reform.

Mathematics teachers' lack of theoretical knowledge can be summarized as probability statistics, geometric proof, graph transformation, number theory preliminary and so on. Theoretical knowledge is the medium of cultivating learning ability, which requires mathematics teachers to master rich modern mathematical theoretical knowledge. The new course reform puts forward higher requirements for mathematics teachers' theoretical knowledge level. The lack of teachers' theoretical knowledge will lead to the students' inaccuracy and profundity in learning mathematical concepts. Therefore, it is necessary to cultivate the high-level teachers.

### **2.2 On the training of normal students' mathematical skills**

The improvement of normal students' teaching ability must rely on long-term effective practice. Both students and mathematics teachers should be clear about the important influence of practice on the mastery of subject skills. The evaluation and flexibility of teaching itself urge teachers to make a lot of decisions by using a lot of knowledge and skills to flexibly grasp teaching activities. In addition, the independent ability and judgment ability of normal students are also very important in teaching.

### 3. On the comparison of professional quality and concept

In the stage of compulsory education, the requirements of mathematics teaching include the comprehensiveness, foundation and development. It is necessary to integrate students' practice with mathematical knowledge and narrow the distance between students and mathematics. In the new course reform, the focus of mathematics teaching is not only instrumentality, but also to cultivate students' intelligence development and self-improvement ability, reflect the cultural value of mathematics, so as to realize the educational goal of students' psychological development. However, due to the erosion of teaching concept in the past, many teachers have a shallow understanding of it. The problem of the duration of students' attention is the influencing factor of the teaching effect that teachers pay attention to. Teachers should adopt the things that have weak connection with mathematical knowledge to attract students' attention. In order to create a good mathematics learning environment, teachers should not only make students experience the interest of mathematical knowledge, but also make the problem-solving process in rich and exciting way, which requires the initiative and enthusiasm of students. Therefore, the theoretical knowledge reserve of normal students is as important as their teaching ability and emotional thoughts. While learning theoretical knowledge and cultivating ability, normal students should study the education of emotional attitude and improve their ability to control students' emotional attitude.

### 4. Suggestions on mathematics training for normal students

The understanding of normal students for mathematics teaching skills directly affects their employment. Each educational company will require normal students to show their teaching skills and recruit by written examination and interview. Thus, it can be seen that normal students' teaching skills have an important impact on their employment competition. Normal colleges and universities should improve the scientific and reasonable teaching skills training mechanism to improve the employment competitiveness of normal students.

First of all, normal colleges and universities should improve the mechanism and content of teaching skills training in teaching programs, highlighting teaching skills and subject skills. Research shows that the teaching skills of normal students play an important position in both work and employment. At present, the training of mathematics education major in normal colleges and universities in China focuses on the teachers with mathematics teaching expertise. We should vigorously improve the cultivation of mathematics professional ability, and strengthen the theoretical and practical teaching of mathematics practice teaching. These aspects are involved in mathematics classroom teaching and problem solving. The teaching skills of mathematics teachers are established on the basis of comprehensive quality training of theory, ability, basic skills and practice. In order to make normal students change from students to teachers, they can evolve into creators of mathematics teaching environment, providers of teaching resources and guides of learning practice. If the teaching skills of normal students are not systematically trained, without comprehensive knowledge of basic skills, and strong point in one skill, as the result, being a unqualified teacher, they will fail to meet the needs of teaching, and unable to carry out teaching activities effectively. Therefore, only by reconstructing the training mechanism of mathematical skills can we cultivate more advantageous normal students.

In addition, emotional attitude is one of the mathematical literacy that normal students should have. Mathematical literacy is the knowledge, ability, skill, concept and quality literacy acquired by teachers and students through mathematics education and their own practice and cognition activities. Mathematical literacy includes not only all the characteristics of quality, but also the characteristics of accuracy, innovation and practicality. The new course reform mentioned that the cultivation of mathematical literacy should start from the stage of compulsory education.

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