

# The Application of Establishing Morality Education in Colleges and Universities in Higher Mathematics

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**Abstract :** The timely integration of moral education into the process of higher mathematics teaching will help students learn mathematics knowledge and understand mathematics. It is a precious wealth of human history from the historical process of mathematics development. Among the subject courses offered in colleges and universities, mathematics is one of the indispensable basic courses. In the process of teaching, teachers maintain the basic concept of building morality and cultivating people, which plays an important role in the development and improvement of students' personal character. This paper mainly starts with the deficiencies and importance existing in the process of building morality and cultivating people in colleges and universities, and discusses the practical significance and effective ways to the development of students, so as to better realize the all-round development of students.

**Keywords :** Colleges and Universities; Mathematics Courses; Moral Education

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## 1. Introduction

Under the influence of traditional teaching ideas, some mathematics teachers pay too much attention to the teaching of students' mathematics courses and ignore the implementation of the teaching idea of moral education, which is not uncommon not only in the primary education stage, but also in some colleges and universities. In fact, the idea of "cultivating people with virtue" in higher mathematics curriculum is contained in mathematics knowledge, but it needs the further exploration and practice of mathematics teachers to organically combine "advanced mathematics" with "ideological and political" education. While making the classroom knowledgeable and interesting, let students really feel the "temperature" of higher mathematics courses, improve students' interest in higher mathematics, and the teaching effect of "moistening things silently" will be more remarkable.

## 2. The deficiency of neutral morality in mathematics teaching

Mathematics is an important subject in the school curriculum, and moral education is one of the indispensable courses in students' school education. At present, the deficiencies in establishing moral education in mathematics in colleges and universities are mainly reflected in the lack of awareness of moral education penetration in mathematics teaching. In classroom teaching, mathematics teachers often pay attention to the explanation of textbook knowledge, often ignore the input of students' moral education thought, and the teachers themselves do not have a thorough understanding of moral education ideas and principles. Thus, the infiltration of students' moral education in mathematical problems is ignored; The infiltration methods are improper and limited. Mathematics teachers conduct moral education infiltration in the form of statements or unilateral talks in teaching, which is lack of interest and difficult to stimulate students' interest. Students often go in and out of the contents explained.

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### **3. The importance of moral education infiltration in mathematics teaching in colleges and universities**

First, most of the logical thinking of college students has achieved initial results, but under the traditional teaching mode, students are prone to be tired of learning, which is not conducive to the long-term development of students. In this regard, mathematics teachers should actively seek new moral education models, improve classroom teaching efficiency, and promote the development of college students' cultural level and comprehensive quality; Second, in college mathematics classroom teaching, teachers should further strengthen the integration and penetration of moral education and curriculum teaching, improve the diversity and interest of classroom teaching, and promote the overall improvement of teaching quality; Third, in the practice of mathematics teaching, teachers first base on the knowledge content, and then combine the curriculum content with the penetration of moral education, so as to expand and extend it appropriately, so that students' knowledge, intention and behavior can be positively guided, and realize the real purpose of moral education.

### **4. Practical significance of moral education infiltration in mathematics teaching in colleges and universities**

Under the current educational background in China, improving students' comprehensive quality is one of the important teaching objectives. There is an inseparable relationship between college education and moral education, which is embodied in the following two aspects:

#### **4.1 The significance of implementing moral education infiltration to the development of students' subject**

Moral education curriculum has the characteristics of consistency with the purpose of college education concept. Almost all the educational objects faced by colleges and universities are adults and can be responsible for themselves and their actions. However, affected by all aspects of society, students are still very restless and unstable, and often have various psychological problems, which requires schools to strengthen moral education for such students. For students studying in school, it is not only necessary to provide psychological counseling for students in ideological and political courses, but also teachers of higher mathematics should combine moral education infiltration with subject knowledge to help students' all-round development.

#### **4.2 The significance of implementing moral education infiltration to the spread of civilization**

Under the background of diversified moral standards, the important position of school moral education is more prominent. Students' outlook on life, values and world outlook have begun to take shape, but they need teachers' guidance to further improve. School moral education teaching should spread social civilization in an innovative form, cultivate students' ability to rationally distinguish things, and achieve healthy psychological development. The above work includes the correct guidance of students' thoughts and behavior transformation. It is not difficult to find that one of the main tasks of college education is to implement moral education for students.

### **5. An effective way to uphold morality and cultivate people in mathematics teaching in colleges and universities**

#### **5.1 Updating the teaching concept and basing on the students**

The guidance of school education on classroom content exists in the early stage of the creative development of mathematics classroom. Influenced by the traditional teaching mode, teachers' complacency is a major obstacle in the current mathematics classroom. Therefore, teachers should actively explore new teaching modes and update their teaching ideas in time. The teaching and research group of higher mathematics should not only convey the teaching task of mathematics curriculum itself, but also include the infiltration of moral education, and do a good job in the arrangement and guarantee of teaching key points; Teachers should be good at giving full play to their subjective initiative and combining morality with cultivating people, and have an overall understanding of the teaching of mathematics, so as to explore the teaching methods jointly with the teaching and research group, and practice a set of complete teaching methods of their own; Teachers should take the initiative to change the stereotype about the teacher profession itself, increase the opportunities for interaction between teachers and students, and provide students with a platform to speak freely about the course content in the classroom, in order to give students space to give full play to their subjective initiative, and improve students' enthusiasm for learning mathematics courses. In the teaching of "derivative of higher order", i.e. "derivative of higher order is defined step by step":

$$(x^n)^{(n)} = n!$$

$$(x^n)^{(n+1)} = 0$$

$$(a^x)^{(n)} = a^x (\ln a)^n$$

$$(e^x)^{(n)} = e^x$$

Through this step-by-step calculation, students not only learn the subject knowledge, but also obtain and develop the spirit of never forgetting the original intention, firm belief and indomitable. This kind of teaching takes into account both teachers' teaching and students' learning, and further strengthens students' firm ideals and beliefs.

## 5.2 Strengthening self recognition with celebrity examples

Everything in the world is different. There are more or less individual differences among students due to different birth, growth environment and personal experience. Therefore, when doing class management, teachers should fully consider the individual differences of students and teach students according to their aptitude. Most of the students in the stage of college education have initially formed their own thinking mode and values. Teachers should not have the idea of transformation or control, but should deeply understand the students' thoughts and fully respect the students' personal thoughts and recognition habits of things. For example, calculus is the core part of higher mathematics. With the joint efforts of scientists of all ages, it has gradually matured and tended to be perfect. Many theorems in mathematics are defined by the names of relevant scientists. Senior teachers in colleges and universities can share the struggle experience of these scientists with students, guide students to feel and learn their craftsman spirit of pursuing excellence and perfection in things, correct their attitude and change their ideas in time when students encounter difficulties or face their own shortcomings, in order to study hard and aspire to become talents. In addition, we should teach students to learn self encouragement when they are unhappy in life, use the bottlenecks and frustrations encountered by mathematicians in the struggle process to give themselves confidence, and cultivate students' ability to resist setbacks, so as to help them improve their optimistic spirit and courage to overcome difficulties.

## 5.3 Infiltrating educational thoughts and strengthening ideals and beliefs

The teaching content of higher mathematics is rich. The thought of educating people is permeated in the teaching process, and teaching and educating people is the main line of the teaching content. Besides the explanation of subject knowledge, mathematics teachers should also introduce moral education into specific teaching links, pay attention to the cultivation of students' mathematical thinking ability, and enhance the interest of classroom teaching, to improve students' learning interest and creativity. In addition, in the daily teaching process, teachers should also strengthen the cultivation of students' firm faith to truly realize the sustainable development of college students. For example, teachers introduce the snail spirit when teaching the convergence of harmonic series. It is not difficult to see from this part that as long as the items are added enough, and they can reach any large number. This is the so-called "snail spirit", that is, although bit by bit is becoming smaller and smaller, a little makes a lot, and a little makes a lot. If you work hard every day, an iron pestle can become a needle. If you stick to it, your goal will be achieved.

## 6. Conclusion

Using the moral education factors in the broad history and culture of mathematics to carry out moral education is conducive to cultivating students' national emotion of loving the motherland and establishing lofty ideals. In a word, in the process of classroom teaching, college mathematics teachers should be good at excavating the moral education factors of mathematics itself, pay attention to the cultivation of students' positive learning attitude, and strengthen the attention and promotion of students' comprehensive quality development while educating students' mastery of subject knowledge, so as to help each student form a correct outlook on life, values and world outlook to the greatest extent, develop good moral ideas and behavior habits, and lay a solid foundation for future long-term development.

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