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Based on the necessity of mathematical life social investigation research

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Abstract: *From the perspective of education and teaching, this paper takes mathematics education as an example. According to the questionnaire statistics of middle school students and college students on the application of mathematics in life, it leads to the necessity of mathematics in life. Applying the advantages of education and teaching methods at home and abroad, and combining the current mathematics education and teaching in our country, this paper expounds the theoretical value and practical application value of mathematics in life, aiming to make students realize the true meaning of mathematics and integrate mathematics into our daily life.*

Keywords: *Education; Mathematics education; Mathematics in Life; Meaning of Mathematics; The social survey*

1. The research purpose of mathematics in daily life

Mathematics has a huge role in our daily life, and has close link with our life, but on the other hand, as the mathematics education teaching stereotype, student learning of mathematics gradually lost confidence, as it should be make mathematics become very dull and boring, such as learning method is single, easy to memorize, etc.;As the mathematical difficulty rising on the other hand, many students gradually lost patience and interest of mathematics learning, and even holding the manner which hate rejection mathematics, shut your door to mathematics, enter the society into the jobs has gradually forgotten mathematics to our role, which makes the mathematics and life closely linked into the empty talk, Some people even question the significance of learning mathematics and why we need to learn mathematics.Life for mathematics, in fact, is never dry up the source of mathematical problems, if the knowledge and life contact, the application of mathematics in our daily life is the best of both worlds to achieve the mathematical life and life mathematics.In terms of the mathematics textbook itself, it contains a very rich knowledge, and a large part of them are actually with the students' life has a higher relevance.[1] Once students lose interest in mathematics, he won't go to study it more not deliberately think math problems in life, if you want to use mathematical knowledge to help us to solve some problems in life, you must start from the education teaching, from the perspective of the student body, and fundamentally improve the students' interest, guides the student to mathematics knowledge related to daily life, Only in this way can we meet some life problems in time to associate with mathematics, mathematics will gradually integrate into our life.

2. The research process of mathematics in life

2.1 In-depth investigation of student groups

In order to further understand the views of middle school students and college students on mathematics, we conducted a social survey. In this survey, we randomly selected 98 middle school students and college students, including 49 boys and 49 girls (refer to Table 1).Through the questionnaire, we know their different degrees of love for mathematics.According to the final survey results, it was found that almost half of the students did not like mathematics, and some even thought it was unnecessary to learn mathematics.The distribution of students' liking for mathematics is shown as figure1.Survey statistics table is shown as table1.

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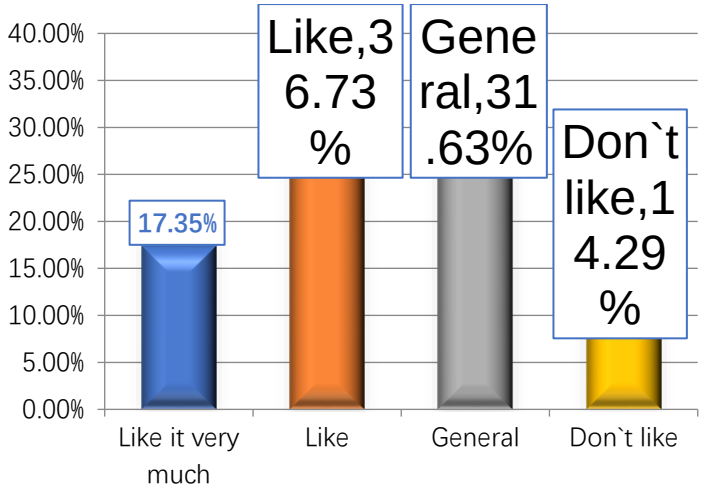

Figure 1: The distribution of students' liking for mathematics

Table 1: Survey statistics table

	options	subtotal	The proportion
gender	male	49	50%
	female	49	50%
Reading the status	Junior high school	40	40.82%
	High school	24	24.49%
	The university of	34	34.69%
The role of mathematics in life	Big role	34	34.69%
	Have a role	55	56.12%
	optional	7	7.14%
	No effect	2	2.04%
Have you ever used mathematics to solve a relevant problem	is	91	92.86%
	no	7	7.14%
In what ways is mathematics used in life (multiple choice)	shopping	66	67.35%
	entertainment	54	55.1%
	High-tech sector	85	86.73%
	useless	4	4.08%
	other	47	47.96%

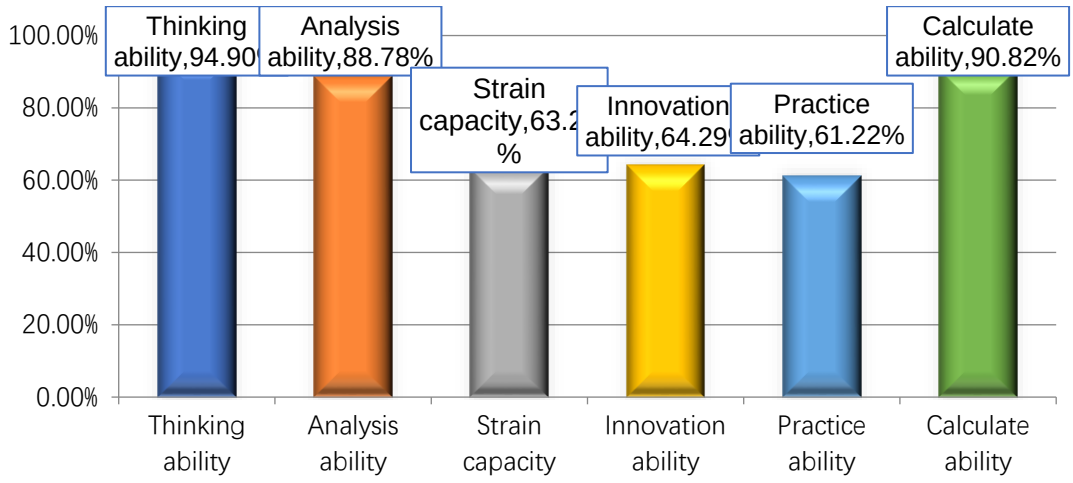

Figure 2: Distribution of students' ability improvement (multiple choices)

The survey results also showed that students who did not like math thought math was not only a relatively difficult subject, but also useless in life and of no help to themselves.But compared with like

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this part of the students think mathematics is not only in the life has brought a lot of convenience, at the same time also brought a lot of help to itself, such as to change and improve the thinking ability, analytical ability, logical ability, practice ability and innovation ability, students' ability to enhance distribution is shown in figure 2.The above shows that mathematics is an indispensable subject. For students, increasing their interest in mathematics can not only facilitate our life, but also improve their own ability.

In order to integrate mathematics into our daily life, first of all, students need to have a strong interest in mathematics. To solve the problem that the above students have no interest in mathematics, we need to start with mathematics education in China, and fundamentally analyze the problems existing in education and teaching in China.

2.2 Changes in Chinese education from ancient times to the present

In ancient times, receiving education is the privilege of the ruling class, a slave is not the right to education, and education is the process of infusion and passive accept, controlled and regulated process, education method and learning method of the single, rigid, more is rote learning, teaching content is given priority to with theory, will not let the student contact the contents of teaching to life, In this process, the main purpose of education is not to obtain practical knowledge, but to receive education itself. Whether or not you can receive education and what kind of education you can receive are symbols of different social status.With the continuous progress of society and the development of science and technology, the education in our country is also undergoing earth-shaking changes. All people can receive the same education, everyone has the right to receive education, and everyone must receive a certain degree of education.The diversification and modernization of education make people have earth-shaking changes in educational thoughts and concepts. The classroom becomes vivid and interesting, which is no longer stereotyped education, but lets students learn to think and find problems actively.These changes have greatly improved students' interest in learning knowledge, and they are more willing to bring mathematical thinking into life to solve practical problems in life.

2.3 Differences in education and teaching at home and abroad, as well as research status and development trends

In our country, the students' learning process, learning method is relatively tedious, difficult, especially in mathematics this class is more difficult to understand the subject, and all reference only ranks and grades, the selection of the process too depressive, became to entrance and enters a higher school, rather than to pursue something they want to entrance, Appropriate release of students' imagination and thinking ability may play a vital role in this situation.Foreign education, on the other hand, is basically student-oriented. Students' learning and thinking mode are arranged by themselves, and they choose the direction and way of learning according to their own interests and specialties, which is relatively more conducive to the personalized development of students.However, foreign education methods that are too open may cause students to have no clear concept of right and wrong, and most of them have no concept of discipline and organization. Therefore, education and teaching need to combine Chinese and western education methods, take the essence and discard the dross in order to achieve comprehensive development.

In recent years, our country also gradually let the classroom into the students' life, in mathematics, for example, math is a boring and abstract a basic subject, make mathematics into your life, so that the students can use mathematical thinking about all kinds of things in life, with the elements in the life to replace the abstract mathematical elements.But different from China, most countries will choose to accept others' mathematical ideas through hearing, vision and touch (a variety of games), not only using the kind of fixed mathematical model to require students to understand.Therefore, in order to make students take the initiative to bring mathematics into their lives, teachers should do the following five points:

(1) It should be consistent with the nature of mathematical exploration, starting from the problem, let students actively participate and focus on the collection and use of evidence;

(2) Teaching mathematics should reflect the values of mathematics, encourage a healthy spirit of questioning and overcome dogmatism;

(3) Mathematics teaching should pay attention to eliminate students' learning concerns;

(4) Mathematics teaching should be extended to outside school;

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And (5) acceptance of math takes time. [2]

By strengthening students' mathematics quality education, we can not only cultivate students' perseverance and perseverance, but also cultivate students' autonomous learning ability [3]Therefore, in the process of mathematics teaching, the appropriate guidance of students to diverge their own thinking, rely on their own knowledge to carry out in-depth exploration, have their own ideas will naturally bring mathematics into daily life.

3. Research value of mathematics in daily life

3.1 Theoretical Value

The mathematical modeling theory proposed by modern mathematics provides us with the opportunity to connect mathematics with real life. The process of mathematical modeling is the process of applying mathematical theoretical knowledge to practical problems.Edward David, former science adviser to the US President, once said that "few people realize that the high technology which is so widely praised today is a mathematical technology in nature".[4]This remark underscores the importance of mathematics in high technology. Nowadays, many students reject the course of mathematics. The main reason is that they do not seriously discover the interesting things related to mathematics in life, and subconsciously think that they learn mathematics to cope with all kinds of exams, so they lose their confidence and interest in mathematics. Educator Rousseau believed that teaching should allow students to learn from life and various activities, and gain direct experience by connecting with real life. Active learning is more useful than passive acceptance of adult preaching or simple learning from books. Therefore, students' interest in mathematics will be greatly enhanced by integrating mathematics into their daily life.

3.2 Practical Value

In our real life, from the macro view, mathematics is used in the simple shop to pay for something, to the rational manipulation of the entire financial market. From the micro point of view, a series of electrical appliances and electronic products that we use in our daily life are also based on mathematics. From Isaac Newton's discovery of gravity, to Einstein's theory of relativity, to Stephen Hawking's "Big Bang" theory, mathematics is full of charm. There is a very important theory in philosophy, that is, quantitative change causes qualitative change, and quantitative change has a direct relationship with the application of mathematics. Through mathematical research on quantitative change, the law of the development of things is summarized, which has affected the global economic development, and many European countries have suffered a major blow[5].Mathematics and language are also inextricably linked, such as the number coding in data transmission, cryptography related language and so on, are evolved from numbers. And the development of mathematics also has a role in promoting the development of language, now very popular network language, although it is a shock to the language on the traditional books, but for the development of language in human history has an irreplaceable role.[6]From the point of view of the spread of network language, it is inseparable from the Internet, and the Internet is a huge number system, and the formation of many network language is from the mathematical thinking and logical way. Therefore, good use of mathematics, small to our daily life, to the development of the whole human society and the future fate.[7]

4. Research results of mathematics in daily life

Mathematics in life can be seen everywhere, from the ancient Qionglou Yu Yu, to the current high-rise buildings, the beauty of three-dimensional geometry are incisively and vividly reflected. We can see the beauty of mathematics, experience the beauty of mathematics, appreciate the beauty of mathematics; And our daily life is inseparable with numbers and mathematics, after mathematical calculation can often facilitate our life to save our time.[8]Mathematics also teaches us rational thinking, rational thinking is very important to us, how to look at a problem rationally, how to calmly face the emergency, which is of great significance to our future work and life. Where there are numbers can be called mathematics, and all numbers are "imaginary", because they are the invention of thinking, we need a different type of shape concept, used to describe our trivial and irregular world.[9]

In fact, mathematics must be well integrated into life. Tao Xingzhi said, "Education can only work through life and truly become education."[10]According to the research and analysis of this social survey

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report, it can be concluded that if we want to make mathematics integrate into our life in a real sense and make mathematics into life, we can change the teaching method from the student group. To this end, we propose the following four points:

Improve students' interest in learning by changing teaching methods;

Make use of the modernization and diversification of educational forms to enrich the teaching content;

Combining the advantages and disadvantages of education and teaching at home and abroad, taking the essence and discarding the dregs;

In the process of teaching, students should be actively guided to contact with real life and think actively.

Through the knowledge into life, the mathematics into life, stimulate students' interest in learning, feel the fun of mathematics, make the classroom more vivid, so that students have a perceptual understanding of mathematical knowledge.[11]Let the students can use the right vision to look at mathematics this basic subject, experience the fun, so that mathematics is no longer a boring subject.

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